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ABSTRACT

The book summarizes the current state of knowledge concerning language development in children with Down Syndrome (DS). The first chapter reviews language development in normal children, noting such stages as gestures, first sounds, development of understanding, first spoken words, and the two-word stage. The next chapter examines language skills in DS children and stresses individual differences within a wide range of development. A table of norms for language development in DS children is provided. Chapter 3 considers the particular difficulties which delay language development in DS children. It stresses the importance of ensuring that the child has opportunities to talk and encouraging and rewarding his efforts. Discussed in Chapter 4 is the use of signing in conjunction with speech to encourage language development in very young children. Chapter 5 looks at reading in DS children, with several case histories and a recommended structured reading program going from matching, selecting, and naming pictures to the same sequence for flash cards. The final chapter describes a variety of activities to encourage language development. Toys, games, and instructional materials are listed. Contains 115 references. (DB)

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# The Development of Language and Reading Skills in Children with Down's Syndrome

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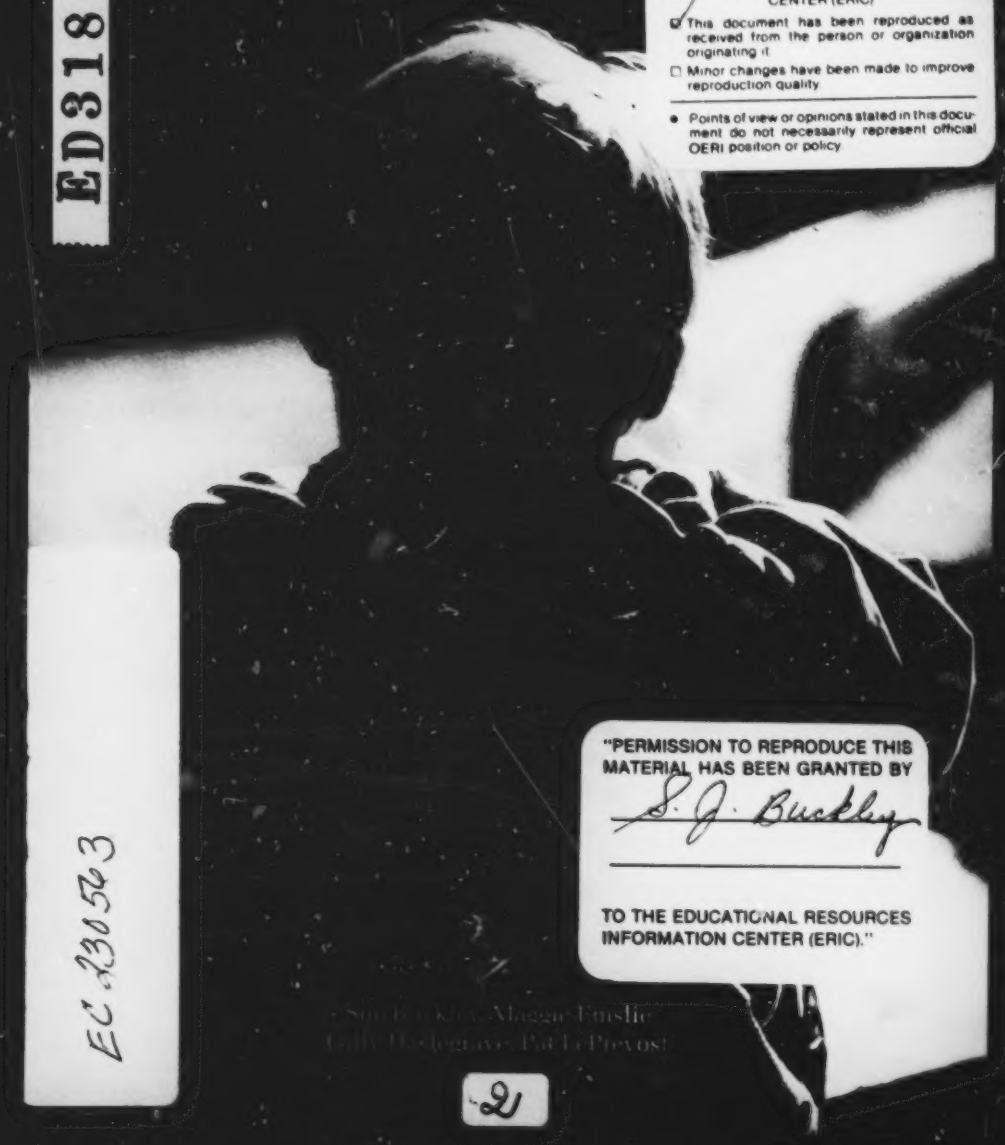

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# THE DEVELOPMENT OF LANGUAGE AND READING SKILLS IN CHILDREN WITH DOWN'S SYNDROME

Sue Buckley Maggie Emslie
Gilly Haslegrave, Pat LePrevost

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Cover Picture: Zoe, age 3½, signing "little" on seeing a little boat on her holiday

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Sue Buckley
Senior Lecturer in Psychology
Director: Down's Syndrome Project
September 1986

## INTRODUCTION

The Portsmouth Down's Syndrome Project came into existence in 1980 as the direct result of a letter which I received from the father of a young lady with Down's Syndrome. Leslie Duffen wrote to me about the progress of his daughter Sarah and in particular about the way in which she had begun to learn to read at a very early age. Sarah's progress at the age of twelve was really advanced. She had much better language skills than most children with Down's Syndrome ever achieve and was reading and writing well. She was being educated at that time in a local comprehensive school.

Leslie felt sure that Sarah's advanced language skills were a direct consequence of teaching her to read from the age of three years and that other children might well benefit from being taught in the same way. He hoped that he could find a psychologist who would be willing to undertake some research with a group of children with Down's Syndrome to see if his ideas might be correct.

I read Leslie's account of Sarah's progress with considerable interest. Sarah had been introduced to reading at the age of three years and quickly learned a sight vocabulary of many words. This in itself was a surprising achievement but I was even more fascinated by Leslie's hypothesis that Sarah's understanding and use of the spoken word had developed from her reading. He felt sure from his observations that she learned to understand and use words that she had seen in print more rapidly than words she only heard. (Normally, of course children learn to understand their native language from listening to the speech they *hear* around them).

As I am a psychologist teaching in a Polytechnic, I have ready access to all the research studies published on Down's Syndrome, so once I had read Leslie's letter, I went to the Polytechnic library to see what information I could find that might shed some light on Sarah's achievements. I looked for any studies which reported on the development of reading in children with Down's Syndrome and any studies which might explain their language learning and memory difficulties. One thing Sarah's progress suggested was that her ability to retain things she had seen was better than her ability to retain things she had heard (or in psychologist's jargon - that her visual memory was more effective than her auditory memory).

I found enough research evidence to convince me that the whole issue was indeed one that should be investigated and I agreed to organise a study of preschool children, but warned Leslie that I could do nothing without the money to pay for the research. While I began to prepare an application for a research grant, Leslie succeeded in convincing the Down's Children Association that this research was important and the Association provided me with the money to pay for the first year's work.

From 1980-1983, with the help of a colleague, Elizabeth Wood, and more funds from the DCA in Devon and the Joseph Rowntree Memorial Trust, I was able to study the language development of all the two to five year old children with

Down's Syndrome in two local health districts and to look at some of the issues surrounding the teaching of reading and signing. This work is discussed later in the book in the chapter on reading and in other publications (18,19,20,21,22).

When Leslie wrote to me he knew that I was a psychologist by training and a specialist in the field of mental handicap. He also knew that I might have a personal as well as a professional interest in Down's Syndrome as I have a teenage adopted daughter with the condition.

Certainly, bringing up Roberta had given me a first hand view of the difficulties most of the children have with learning to talk. Roberta came to live with us at the age of sixteen months. She was late to begin to talk, saying her first words at four, and progressing with her language more slowly than a normal child. Now, at the age of seventeen, she can make herself understood quite well, but she talks mainly in short "telegraphic" sentences like "Me go France next week" or "Telly on please". She sometimes has difficulty in actually saying the words clearly and the two problems, the lack of proper sentences and the poor articulation, mean that strangers sometimes find her hard to understand though her speech is still improving slowly.

Children born with Down's Syndrome do not all have the same degree of language difficulty but Roberta's progress and her problems are fairly typical. Many children with Down's Syndrome talk more clearly and in better sentences than Roberta, some do not manage as well as she can.

While we know that it is usual for language development to be delayed for these children, we do not yet know enough about why this should be so. We are not sure what specific difficulties cause their language learning problems. Nor do we know how much we can do to help them to achieve better language skills. However, we do have some partial answers and that is what this book is about.

Most of us take our language skills for granted. Children learn to talk so easily we pay little attention to the process and do not need to pause and think about how complicated it is and how surprising it is that most children learn an enormous vocabulary and can speak in long sentences by the age of five. Nor do we think about the importance of language for the child's life, unless we have to. Being able to understand language and to use it is important for every aspect of our lives. It is the medium through which we learn about the world around us and express our wants and our feelings. If you are not able to talk it is difficult to have much control over your life, to ask for what you want, or to organise your everyday experiences and existence. There is some evidence that children with particularly poor language skills are more likely to have behaviour problems. It is not hard to see how frustrating it must be if you cannot make people understand you (5l). It is also really difficult to make friends and to share your thoughts and feelings with others if you cannot talk reasonably well. This can and does lead to social isolation and loneliness in teenage and adult years (23) Because language is so important in our lives, we must explore ways of helping our children to talk more effectively.

By 1983, I had become totally immersed in this area of research and over the past three years I have had the opportunity to present workshops on the development of language and reading skills in children with Down's Syndrome to many audiences in the United Kingdom. The majority of these groups contained parents, teachers, speech therapists, psychologists, health visitors and doctors from the local area. All these people are involved in the care and teaching of the children. They all wanted to learn more about children with Down's Syndrome but their training and experience obviously varies widely.

The idea of preparing this book and the video tape which illustrates it, came out of the experience gained from these workshops. I learned that there is a great demand for practical information based on current research to guide remedial efforts. This book is an attempt to meet this need and to offer a summary of the current state of knowledge in a form that is useful to the practitioner.

Writing a book that will be useful to such a wide range of people is not an easy task, as the amount readers already know about children with Down's Syndrome and about language development will vary greatly. I asked three experienced speech therapists to help me with this project. As authors we all share the view that parents are the most important people in any childs' life and that parents can make more use of our knowledge to help their children, than any of the professional people mentioned.

For this reason, we have written the book in a style that we hope makes it a useful guide to parents. However, we also hope it will be useful to anyone who is involved professionally in the care and education of young children with Down's Syndrome. The chapters which review current research findings are referenced so that anyone wishing to read the original research can do so. The research is reviewed from the viewpoint of its practical relevance.

Each of us works with children and families as part of our job. We are describing what we do, why we do it and how to do it yourself! Our experience and our knowledge of research studies leads us to firmly believe that all children with Down's Syndrome need and will benefit from specific language teaching. Ideally, this teaching should begin in the first few months of life and continue into adulthood.

Secondly, we believe that teaching should be based on what we know about the children's particular difficulties as well as our knowledge of language development in normal children.

Thirdly, if signing and reading are to be built into the language teaching, they should be seen as part of a coherent programme designed to eventually increase the child's understanding and use of spoken language. Maggie Emslie, until recently, Director of the Down's Children's Association and a speech therapist by training, has contributed to the first chapter, which sets the scene by describing what we know about how normal children learn to talk. She explains the steps and emphasises the importance of all the learning that takes place before any baby says his first word.

Pat LePrevost, Chief Speech Therapist for the Mentally Handicapped in Oxfordshire, has contributed to the chapter on signing. Pat has been teaching signs to young babies with Down's Syndrome, through their mothers, for a number of years. Her own experience and ours in Portsmouth suggests that many of the children do find gesture easier than words and that it builds a bridge towards talking. All parents and babies use gesture, holding out hands to say "pick me up", pointing, waving "bye-bye", nodding for yes - the examples are many. Signs may help in a number of ways and Pat explains how to teach signs in this chapter.

Gilly Haslegrave, Senior Speech Therapist for preschool children with special needs in Portsmouth has contributed a practical chapter describing ways in which you can encourage language development. Gilly has included many ideas for games and activities and provided a guide to choosing appropriate vocabulary and sentences to teach.

My contribution is twofold. First, I have briefly outlined what is known at present about the language development of children with Down's Syndrome, the reasons for the delays and difficulties and the effects of teaching.

Later in the book, I describe our own work on teaching reading.

As a researcher, I am aware that we are short on good evaluation of some of the methods we are suggesting. I am also aware of all the controversies and debates in the field of language intervention. However, as a parent, I am aware that I cannot wait for definitive research - I have to make intelligent use of the best ideas around to help my daughter now. Teachers and speech therapists are in the same position, as are other practitioners. Like parents, they need to know how to help the children in their care now.

We have tried to bring together the best of current research and practice highlighting what we do know, and what we don't. We hope you will write to us with criticisms and comments, so that we can improve and update the advice we offer in any future editions. Finally, the children tell the story far better than we can - so we have made a 60 minute video of our local children to illustrate the main issues raised in the book.

None of this would have been possible without the support of the Joseph Rowntree Memorial Trust. Their financial support has enabled us to print this book and produce the video.

Sue Buckley, Director Down's Syndrome Project

*Footnote:* In order to make the text readable, we have avoided the constant repetition of the precise description - "children with Down's Syndrome" and in the main simply discuss them as children or "our children". We have also used "he" as a generic pronoun rather than try to constantly refer to "he or she" etc. Apologies to anyone this offends!

Editor

## CHAPTER I

## HOW DO MOST CHILDREN LEARN TO TALK?

Researchers interested in understanding the development of children, mainly psychologists, have been studying the development of language skills in children in some depth over the last twenty years.

The results of this research provide us with some answers to the question but before we can begin to discuss the studies, we need to think about what we mean by language skills and learning to talk.

**Explaining some terms**
This book is about learning to talk or more precisely, how to help children with Down's Syndome learn to talk.

The title of the book uses the term *language development* and before long we will be discussing *communication*. Before we go any further, we need to explain some of these terms. In doing so, we will begin to see the various aspects of language development that we need to think about.

We are interested in teaching children to *talk*, to produce *spoken language* - speech. Before they can begin to talk and in order to progress once they make a start, children have to *understand* the speech that they hear around them each day.

As you will see, we will need to think about both understanding speech and producing speech as we begin to unravel what children seem to do as they learn to speak. These two sides of language skill are called *comprehension* and *production* (or *receptive* and *expressive*) skills.

Language development is an overall term to describe the whole process. To be precise we should talk about spoken language development, because speech is not the only form of language. Later in the book we will be discussing sign language and written language.

These are all ways in which we can *communicate* with each other. A language is a tool to be used. It is a system for communicating with another person to convey your thoughts, needs and feelings. You only need to stop and think briefly to realise that we communicate in quite a lot of ways in addition to using speech. We use facial expressions to "say" a lot - smiles, grimaces, winks and so on. We use gestures such as waving and pointing. We use touch, squeezing a hand, hugging, linking arms. These are just some of the ways we communicate in addition to using speech, and we call all these *"non-verbal"* means of communication.

Children, like all of us, use a great deal of non-verbal communication when they make their wants known, specially early in life. They smile, cry, grizzle, point and wave for example. They also use the non-verbal cues in any situation to help them to understand you when you are speaking. You may say to your

child"we are going out now" and if you are putting on his coat as you speak your actions give him clues to the meaning of the sentence.

So, when we talk about communicating, its the whole process of making yourself understood using any or all of these ways of communicating. When we talk about spoken language we are restricting ourselves to discussing learning to talk only.

**Children's Early Speech**

The first clues to help us understand the process of language development come from looking at the speech children actually produce in the first five years of life.

At first children express themselves with single words, then two words strung together and slowly longer strings of words.

Early on they make use of intonation to convey meaning. If they say"Daddy" meaning"There is Daddy" it will be said in a different tone to"Daddy?" meaning"Is that Daddy?" Slowly they can use longer phrases of words to convey more precise meanings as they begin to work out the rules for building sentences.

**TABLE 1**

**A simple overview of the way children's speech develops**

1. Single words - mainly nouns at first, Daddy, car.

2. Two word utterances - such as"Daddy gone"

3. Three/four words - Daddy gone car

4. Sentences obeying the increasingly complicated rules

   such as:

   "Daddy has gone out in the car."

   or "Has daddy gone out in the car?"

Already we have identified some important steps in learning a language

1. The child has to learn the meanings of the individual words he hears and how to say them himself.

2. He then has to master the rules for putting these words together into sentences to convey what he wants to say.

For the purpose of this book, we will talk about two main sorts of rules - sentence order and grammar. By *sentence order* rules, we mean learning that the meaning of the sentence is given by the order in which the words appear.

One example is the question form we have already given in Table I.4. Another example is "the dog chased the cat" compared to "the cat chased the dog". Changing the order in which you say the words, changes the meaning of the sentence.

By *grammar* rules, we mean all those rules for changing the form of the word to vary its meaning - for example:

Making plurals - dog, dogs; man, men; he/she, they.

Changing tenses - I cry; I am crying; I cried.

Already, we can see that learning a language is a very complicated business. But lets go back to Table I and consider what else we can conclude from how young children speak.

Children speak at first in single words, then in two word utterances and so on. They often produce speech that is all their own. They do not hear adults say "Daddy gone" or "I buyed a sweet". The utterances that they come out with indicate that they are slowly working out for themselves the meaning of words and the rules from the adult speech they hear. They are actively listening, thinking and sorting out the speech they hear in order to master all these complicated features.(I0)

We never sit down and teach a normal child that you ask a statement one way but change the words around if you want to make a question. Nor do we give a three year old a lesson on how to change a verb to change the tense from present to past.

We conclude then, that children are extremely clever and most are born with the capacity to learn the language they hear around them by using their own learning strategies.

**The Learning Process**

However, research has begun to look at these learning strategies and to look at what a child is doing and what the adults in a childs' world are doing to help him as he learns to speak. This research clearly shows that the skills we use to talk effectively begin to develop right from the first months of life.(I06,II1)

It also shows that the child brings a range of skills to the process and is an active learner but that adults play an important part in helping the child. (3,28,86,87)

If the child starts out not quite so well equipped to learn then maybe the adults can find ways to begin to compensate for this. We can only begin to identify the ways adults can help, if we look closely at the process from the beginning.

Babies begin to understand their world and to communicate with you, long before they begin to talk and the foundations for language are being built right

from birth. The whole process is easier to understand if we start at the beginning.

**First actions and sounds**
In the first few weeks of life many of a baby's actions such as sleeping, sucking, crying etc would occur even if no-one else was present. They concern his basic well-being and are not related to a particular person. Gradually a conversation of sounds and actions develops between parent and child, and this period is particularly important. The person closest to the baby at this time, usually the mother, draws the baby into being responsive by noticing what makes him smile, repeating it and imitating many of his actions and sounds. Gradually the baby starts to understand the meaning of her actions, her tone of voice and her facial expression. This is the beginning of language development.

The baby has some basic skills which help this process. He looks, listens and responds. Babies seem naturally attracted to faces and enjoy looking at faces. When they look at you, we call this making *eye-contact.*

Eye-contact seems to act like a cue for communicating . If your baby looks at you, you respond to that look by talking to him and playing with him.

Next the baby begins to smile as well as look. Smiling is really rewarding and we all enjoy getting the baby to smile. You find ways of making him smile, he responds, you do it again. He is learning that his responses produce an effect and that this is fun.

During these baby-games you begin to take-turns with your baby. You tickle him or talk to him - he smiles or babbles back at you. This *turn-taking* is essential now and later for effective communication. When you talk to someone, they must listen. If they interrupt or talk at the same time, the communication will not be successful.

Next the baby begins to babble, as well as look, listen and smile and you really are beginning to have some first "conversations". Your baby will soon begin to imitate the sounds you make.

(You can see some delightful examples of all these features of early conversations demonstrated by Thomas, Tinuke, Richard and Shane - all babies with Down's Syndrome featured on the accompanying colour video.)

**Gestures**
Before the baby begins to say any words, he engages in quite a range of non-verbal communication to make you understand his wants. You will begin to interpret his facial expressions conveying happiness, surprise, curiosity for example and his cries. He will then go on to develop some specific gestures such as waving to say "bye bye", pointing to say "look" or "what's that", pointing and whining to say "Give me that", banging and shouting in his high chair to say "I want a drink" and holding his arms up to say "pick me up please". The use of each of these gestures will develop gradually often as a result of being encouraged to imitate actions by Mum and Dad. (You can see examples

of Tinuke and Antonia being taught to raise their arms to ask to be picked up, on the video).

**First sounds into words**
The baby's first sounds include cries, yawns, sneezes, hiccups, and gurgles. As he grows he experiments with soundmaking through making lots of new noises, such as clicking, babbling and blowing bubbles. This is his way of practising using his tongue, lips and speech muscles in readiness for making speech sounds later. Gradually he drops those sounds which do not occur in the language which he hears around him. Sometimes particularly odd sounds persist simply because they give such pleasure to the child as he makes them.

While at this stage he does not understand the words he hears, the baby begins to interpret tone and loudness. He begins to know that you raise your voice when you are angry, use a soft voice when you are soothing him and a jolly, laughing voice when you are playing. His babble begins to echo the "tone" of the language he hears around him. When the child begins to use this "inflected babble" the parent should take every opportunity to develop his awareness of changes in pitch, by repeating the babble with the same intonation (pitch pattern) and introducing new phrases with different tones (as you can see Richard's Mum doing on the video). Out of this inflected babble the child's first words normally emerge, though some children may miss this babble stage completely or it may be very short. Gradually the baby begins to use sounds more meaningfully when the parent attaches it consistently to an object or person. The sound the baby makes may be quite different from the real word, but as the parent continues to repeat it correctly the "pronunciation" becomes refined. This is the time to practice listening and imitating games.

**Understanding develops**
From understanding situations, gestures and voice tones, the child gradually begins to understand the meaning of speech.

To learn to talk, a child has to realise that all the sounds made by the adults around him have meanings. He has to then begin to work out the meaning of each word he hears in his everyday world.

The words he hears used most frequently will be the ones he understands first. The names for the people, toys, familiar things and activities in his everyday world. Once he understands a number of words for these everyday experiences he will gradually begin to try to use the words himself.

At this stage mothers help their children considerably by using a lot of what we call *descriptive* speech because what they say *describes* what the child is looking at or doing. The child then hears the word or words to describe what he can see or what he is doing and thinking about. He will obviously begin to learn the meanings of the speech more easily if the learning situation is made as clear as possible in this way.
Indeed research shows that the type of words children learn and the speed with which their vocabulary of words grows is related to how well mothers use this *descriptive* style of speech.

There are two ways to increase the teaching value of your conversation to small children when they are at this one word learning stage.

One is by increasing the amount of descriptive talking you do, using as many opportunities as you can during the day to talk to your child in this way. The second is to try and make your talk as *"child- centred"* as possible. This means taking the cue from the child and talking about what he wants to do or is doing. This way there is much more chance that he will understand easily and that you are giving him the words for his thoughts at that time. (You will see some good examples of"child-centred" talk if you watch Michael's mother on the video).

For the development of understanding the child needs lots of new experiences with people, situations and ideas. As their understanding of speech develops, children usually rely less on gesture.

**The child's first spoken words**

The child's vocabulary of single words usually grows gradually. The earliest words are often those most meaningful to him and ones that he wants to use. These will be words for the objects and people that are important in his daily life such as teddy, mummy (or daddy), drink, bed. Some children's earliest words are quite unusual. A child brought up on a farm may acquire the word"tractor" as one of his first! Whichever words emerge first, pronunciation (articulation) is usually quite poor, but improves as the child repeats and practises the word. Sometimes a new word will appear once or twice, then disappears, only to reappear when we are despairing of ever hearing it again. Similarly children vary enormously in the number of single words they have fore they start to use two words together and in the length of time taken to reach the two-word stage.

**The two-word stage**

Most children have a vocabulary of around a hundred single words when they begin to string words together to increase the amount they can communicate.

The kind of constructions children make have been studied and a list based on this research is included at the back of the book.

Both at the one-word stage and two-words stage, several learning strategies seem to be at work.

One is *imitation*. Children begin to imitate you at the babbling stage and then they begin to imitate words. The function of this tendency to imitate is probably different at different stages.

One function of imitation is to practise repeating sounds and words as they are heard. The child needs to learn how to produce sounds so that they sound recognisable to others.

So, imitating can improve articulation and if you repeat your child's utterance in a more correct form for him - you can use imitation to help him.

In addition to helping him to improve his *articulation* or the way he pronounces words, imitation also seems to be a strategy for practising new words or structures the child is in the process of learning. This is a stage of *selective imitation*. Children at this point do not imitate just anything or everything they hear. They seem to imitate words that are new and forms of words that are new like plurals or structures like question forms. It is as though they imitate to try it out and reflect on it.

Mothers at this stage are helping their children by often using a technique called *expansion*. When her child speaks to her, she replies by expanding on his words. Expansion can be used in two ways, to increase the child's knowledge of the situation he is talking about and to correct the child's grammar.

So, the child says"Daddy gone" and mum replies,"Yes, Daddy has gone to work" - adding a new piece of information, or she says,"Yes, Daddy has gone" - giving the child the more mature language form for him to copy.

All parents are naturally good as language teachers. Once their child seems at the stage where he is understanding some speech and beginning to produce some first words, they naturally tend to speak in shorter sentences, stressing key words and sticking to simple grammar. Language researchers call this style of language to small children"motherese". Parents seem to intuitively match the way they speak to the language level they feel their child has reached (106).

**Beyond the two word-stage**

Children begin using three and four word utterances quite rapidly and it becomes increasingly difficult to make a simple list of what is happening.

The child is continuously learning new single words and at first these are mainly nouns - names of objects they can see - as these are the easiest to work out at the start. Next come words for everyday actions and experiences, like sleeping, eating, crying, more and gone. Useful social words like no and bye-bye appear early as you can see from the list at the end of Chapter 6.
Next come some prepositions to express the position of an object or a person relative to something else like, in, on and under. All the time, words you can demonstrate for the child will be easier for him to learn.

It is clear that one thing that determines the particular words the child uses is his *ability* to *understand the ideas the word represents*. Hence labels for things you can see are fairly easy (though moving from realising"ball" is the name Mum uses for your ball to being able to use ball correctly as a label for a whole class of objects is quite another matter if you think about it - some balls do not bounce - some are not even round - how would you define ball? The meaning of a word is obviously something which the child builds up slowly).

When it comes to putting two words together like"Dolly sleeping", the young child has to be able to observe and understand the two ideas together. Sentences like"Give teddy a drink" are even more complicated. You are asking a person to carry out a specific action with a specific object.

In normal children there seems to be a clear developmental sequence in which the child's *language skills* and his *understanding* of the world around him are all increasing together. He will show in his play activities how his knowledge of his world is increasing especially when he engages in *symbolic* or *imaginative* play. These are the games with dolls, teddies, soldiers, cars and so on, where toys represent real things and the child's actions as he plays with the toys show he is acting out real activities. He is thinking to himself - let's give dolly a drink, or put her to bed. Being able to cope with this kind of thinking about the world is obviously necessary if you are going to talk at this level.

There is not a simple correspondence between thinking and language. Hearing new words may provoke you to develop new ideas and ways of thinking about the world - so language develops thought and vice versa.

However, one thing which will determine the way the child expresses himself, what he is able to talk about and will want to talk about, will be his level of understanding or stage of *cognitive development.*

The second thing which will determine the way the child expresses himself will be his level of linguistic skill - his success in learning the rules of the language, the grammar and the sentence order rules.

These are many and varied. Because normal children just seem able to absorb and work out these rules, we do not often stop and think about the complexity of the task.

So, a child may be limited to quite simple and short ways of expressing himself, because that is the level of *understanding* he has reached or because that is the level of *language development* he has managed to reach.

The same level of understanding of events in the real world is expressed in "Me go France Tuesday" as in "I am going to France next Tuesday". The first simply displays an immature skill with the linguistic rules - it means the same as the second. It is limited by language level not necessarily cognitive level.

**Using Language**

The final issue we need to consider is *using* language or *communicative competence.*

Having mastered some basic language skills, a vocabulary of words and some sentence rules, the child has to know how to use them to communicate, to hold a conversation, and to get a response. It is possible for a child to know the names for some objects and to be able to say them when asked, but for him not to realise the functional use of language. For example, he may know the words for drink and biscuit and repeat them correctly when asked "What is this?" and shown a drink or a biscuit but still not have realised that he can now use the words to *ask* for a drink or a biscuit when he wants one.

So, it is important that children have lots of practice at using language in social situations and are rewarded.

Rules govern our conversations. We know that a question demands an answer and that people take turns to speak for example. All these conversational skills have to be learned.

Communicating also has to be worthwhile. It is a two-way process between two people. If you speak and the other person does not respond, you will not be encouraged to try again.

Keeping a conversation going is a skill. You have to be able to recognise the reasons for a breakdown in the conversation and how to repair it. For example, the conversation may breakdown because your partner is not listening, or has not understood you. One repair strategy would be to repeat what you said. (You can see a good example of this repair strategy being used by Trudy on the film)

**In Conclusion**

Throughout the chapter we have drawn attention to the ways in which parents help their children. Language learning is all about communicating and babies learn to talk as you communicate with them and respond to them from their earliest days.

This chapter covers a lot of probably quite new and difficult ideas, but we hope that the video helps to illustrate some of them for you.

With the older children, Zoe, Stephen, Mark, Lyndsey Trudy and Matthew, you will see many examples of how their mothers are helping them by the way they repeat, expand and interpret all their attempts at communicating.

We have tried to outline the main features of language development in normal children and to get you to think about what the child is trying to achieve. We have only been able to touch the surface on most of the issues. If you want to read about each stage in the child's progress in more detail, we would recommend David Crystal's recent book: "Listening to your Child". It is a Penguin paperbook written for parents.

The sequences through which a normal child progresses and the way he learns will be a guide to understanding the difficulties a child with Down's Syndrome faces and a guide to planning a teaching programme, provided we bear two points in mind.

1. The way that normal children learn to talk (or read or write for that matter) may not be the *only successful* way to learn.

2. Normal children *do not need* to be deliberately taught - they learn by simply being in a world of talking adults and having strategies for remembering and working it all out for themselves. This has led some researchers to conclude that you *cannot* teach language. There is no evidence that this is the case nor does it seem a logical assumption.

The most important value of an understanding of the normal processes of language learning and development, is that such knowledge enables us to identify the points in the process which are leading to difficulties for the child with Down's Syndrome.

Once we can identify these areas of difficulty, we can plan intervention to deal with each specific problem.

## CHAPTER 2

## WHAT SORT OF LANGUAGE SKILLS DO CHILDREN BORN WITH DOWN'S SYNDROME USUALLY ACQUIRE?

Having thought about language and how it usually develops in the first chapter, we now turn to considering what is known about language development in children with Down's Syndrome.

**Each Child is an Individual**

Before we can do this, please remember a vital piece of information. Children born with Down's Syndrome vary a great deal in their development. This point has already been made in the introduction, but it is important to really think about it again before reading about research. Most research studies look at groups of children and then describe the characteristics of the group as a whole. For example, research shows that children born with Down's Syndrome are more likely to have heart defects than other babies(60). This does not mean every child will have a heart problem. The research has given us an important piece of information and alerted the doctor to be sure to check every baby for a heart defect. But, from a parents' view point, such research can be bewildering as the particular feature the researchers are identifying may not affect their child at all.

So please bear that in mind. We have to describe the research at the group level and will keep saying things like; - children with Down's Syndrome may be later to smile or have difficulty discriminating speech sounds. These findings are important because they alert us to look for these possible sources of learning delay but some children with Down's Syndrome will not be later to smile and will not have auditory perceptual problems. Others may have some, or all the problems to a mild degree, others may be severely affected.

Every child is an individual and in the end the information in the next two chapters must be used to guide your assessment of your child. You can then identify which of the difficulties and delay, if any, that he has and design a programme to help him that is directed to his individual needs.

For parents, there is a real danger that this and the next chapter may seem depressing. It inevitably contains a summary of research that constantly highlights the delays and difficulties their child may face.

Please bear in mind that we firmly believe that the best way to find out how to help our children achieve as much as possible is to start by studying their difficulties. The more we understand why they fail to learn as quickly as normal children, the more effective we can be with our teaching strategies. We are constantly on the look out for strengths as well as weaknesses and that is why we suggest using visual languages in the form of signs and words. Research suggests that their visual memory (for things they see) is more effective than their auditory memory (for things they hear)(75) and that they find it easier to produce gestures than words to express themselves(19,54,103). These are just two examples of the importance of studying the childrens' abilities closely in

order to build on strengths.

So, now lets consider what we know about the language skills that our children do achieve, according to available research.

**A Wide Range of Development**
The first point that clearly emerges from the research is the wide variation in language development, as in other areas of their development.

Some children progress quite fast and by school age are talking in sentences and even reading while other children go more slowly and their first words are spoken at 3 or 4 years of age. A small number of children acquire only very limited speech and may not progress beyond being able to use a small number of single words and signs.

Some results from two of our Portsmouth research studies illustrate the wide range of language development seen in children with Down's Syndrome and illustrate the type of language they use.

From 1980-1983 all the Down's children born in two local Health Districts between 1976-1978 were studied. The children's first spoken words appeared anywhere from 12 months onwards, most beginning at two to three years of age. At five years of age, two children were talking in sentences of four to five words, reading simple books and entered the reception classes of ordinary infant schools. Another child was talking at this level but not making any progress with reading at all. Nine of the fifteen children had small but usable vocabularies and mainly spoke in one to three word sentences. The remaining three children had little or no speech at all - less than ten single words or signs. This wide range of progress is typical of our children.(19,21)

In 1985, we asked ninety Hampshire families with teenage Down's children to fill in a detailed questionnaire and to talk to us about their children's progress, including their language skills. (23) Only three children had no speech at all by the age of eleven. All the remaining eighty-seven children had some speech but again the level of language development reached varied widely.

Of the forty girls in the study 70% of the under 14's and 77% of the over 14's usually made themselves understood with sentences of five or more words. Of the fifty boys, 46% of the under 14's and 70% of the over 14's had reached the five or more word level. Less than half the children used proper grammar but spoke in mainly "telegraphic" sentences.

However for the girls, 18% of the under 14's and 9% of the over 14's still relied on making themselves understood with sentences of 3 words or less and for the boys 33% of the under 14's and 10% if the over 14's used mainly 3 words or less.

When we asked if parents could usually understand what the child was saying, the answer was encouraging, but when we asked if the child was usually able to make themselves understood when talking to strangers things looked very different. The following Table shows the answer

**TABLE 2**

**The Intelligibility of the Speech of Adolescents**

| | GIRLS | | BOYS | |
|---|---|---|---|---|
| | Under 14 | Over 14 | Under 14 | Over 14 |
| Parents usually understand | 88% | 86% | 86% | 73% |
| Strangers usually understand | 45% | 32% | 10% | 18% |

(from Buckley & Sacks 1986)

For these teenagers then, most had some speech and while many had limited vocabularies and used sentences that were short and simple, they could make themselves understood adequately when at home and at school.

However, they had great difficulty when talking to strangers. Imagine how difficult this will make everyday life.

Sadly, many of our teenagers were rather isolated and some created fantasy friends to talk to.

We do not have any precise understanding of the reasons for this wide range of language development. Possibly the most handicapped are those with the most profound hearing problems but we cannot be sure.

The important thing to remember is that teaching will not bring every child to the same level of achievement, but it should help each child to gain a greater skill in communicating than he would achieve without help.

Table 3 will give you an idea of when to expect the early steps in language development and shows the wide variation for the appearance of these skills for both normal and Down's infants.

**TABLE 3**

**Down's Syndrome - norms for language development**

| Activity | Children with DS | | Normal children | |
|---|---|---|---|---|
| | Average age month | range month | Average age month | range month |
| Reacts to sounds | I | ½ - I½ | | 0 - I |
| Turns to sound of voice | 7 | 4 - 8 | 4 | 2 - 6 |
| Say da-da, ma-ma | II | 7 - 18 | 8 | 5 - 14 |
| Responds to familiar words | 13 | I0 - 18 | 8 | 5 - 14 |
| Responds to simple verbal instruction | I6 | 12 - 24 | 10 | 6 - 14 |
| Jabbers expressively | 18 | 12 - 30 | 12 | 9 - 18 |
| Says first word(s) | 18 | I3 - 36 | 14 | 10 - 23 |
| Shows needs by gesture | 22 | 14 - 30 | 14½ | 11 - 19 |
| A few two-word sentences | 30 | 18 - 60+ | | |
| Uses words spontaneously and to communicate | 1½ - 6 years | | | |

(From Cunningham, I982)

These norms are the best available guide at present. We are collecting longitudinal data on a group of children and hope to have some useful information on the expected progress beyond the two-word stage before long.

The table is taken from Cliff Cunninghams useful book on Down's Syndrome for parents. (Souvenir Press, I982).

Now let us look more closely at the findings of research studies that have looked at the progress of language development in children with Down's Syndrome from babyhood. Remember that these researchers have usually studied a group of children and these are general findings. Each child is individual and may show some of the features these studies describe but not others.

**Pre-verbal Communication**

I. Early babbling may be a little slow to appear but is then just the same as babbling in other children. (42)

2. The ability to imitate actions and use gestures is again a little late to appear but then follows the normal pattern. (77)

3. The infants use more gesture and less vocalisation to communicate than normal babies at the same stage of cognitive development (ie same stage of understanding). This suggests a specific delay in producing speech. (54)

**The Development of Speech**

4. Language development continues to lag behind the child's cognitive development and this gap increases with age. (37,54,77)

5. First words appear rather late and new words appear at a slower rate, but the range of early words are the same as we would expect for any child. (26,37,98)

6. The children build the same range of two-word phrases and use them to communicate the same range of ideas as normal children. (30,32,68,89).

**Grammar**

7. Beyond the two-word stage, the children have increasing difficulty with the rules of grammar and sentence construction. They can understand many sentence types, like negative sentences and questions but have much more difficulty in producing them in their spontaneous speech. (12,40,49,110)

8. They will also be slower to learn rules for making plurals and different tenses. Learning some types of words is harder for them as the ideas the words represent become more difficult. (96,105)

**Conversational Skills**

9. The children seem to understand how to use the language they have and some of the rules of conversation. In fact, their abilities to respond appropriately to questions (70) and to keep a conversation going (32) are slightly ahead of normal children who are at the same early stages of language development. (The children with Down's Syndrome will be older than the normal children and their greater experience of communicating must be helping them).

10. While as babies they seem to have some delay with conversational skills like learning to take-turns (66), as they get older they seem to sort this out and to begin to learn appropriate strategies to repair the communication when they are misunderstood (33,104) or when they interrupt (90).

**Articulation**

11. At all ages the children produce more unintelligible utterances than other children. Their words are often not pronounced clearly enough to be easily understood - they have poor *articulation*. (41,47,48,97)

This list is a summary of available research which has simply described how the children progress without specific teaching.

In the next chapter we will look at research which may identify some of the reasons for the children's delayed progress.

## CHAPTER 3

## WHAT PARTICULAR DIFFICULTIES DELAY LANGUAGE DEVELOPMENT IN DOWNS CHILDREN?

While I am sure that we do not have all the answers to this question, research has identified a number of specific difficulties that will make learning to talk particularly hard for our children and help to explain some of the delays in language development already described. Once you are aware of them, you can understand what the child is struggling to overcome and you can try to compensate.

I have tried to discuss the research findings in a practical way in the order that they affect development and to relate them to the stages the child has to go through.

**The pre-verbal stage**

Communication begins between you and your baby as soon as you hold him and cuddle him. You make him feel warm and secure, you fill up his tummy, change uncomfortable pants and generally help him to feel the world is a comforting place and especially that people are rather nice to be with.

When you are playing with him, he may be slower to respond (6) - but give him time. Allow him time to watch you, think and organise his response before you prompt him. Watch him carefully and note the things he does enjoy and respond to. Research has shown that parents are good at this, you do soon get in tune with your own baby even when their reactions are a little different (4).

We know how hard the first few months can be, but if your baby is very tiny, do enjoy him, play with him, cuddle him - he needs this just as much, if not more, than a normal baby to build his feeling of being loved - which in time will give him confidence to keep trying in the years ahead. He may be sleepy and undemanding so that in the course of of a day, he actually could receive less attention than a normal baby of his age.

Try to put all those worries for the future to the back of your mind and just enjoy him now remembering how important such contact is for his development.

After the early stages, where the main differences between your baby and others is his floppiness and slowness to respond, the communication skills become a bit more subtle.

Your baby will begin to smile, perhaps a little later than usual and you may have to work a little harder to encourage him to smile(4). Parents' have found that the babies respond well to touch such as tickling, cuddling, and to movement such as lifting up and down (4). Smiling is important as it is such a warm and encouraging response to get from your baby. One study shows that babies with Down's Syndrome actually enjoy more time in smiling games with their mothers than normal infants (56) and that this leads to warm, close emotional bonds.

Getting your baby to look at your face and to laugh and smile is important. You are already building the foundations of communication. If all this is fun, warm and enjoyable you are really encouraging your baby to *want* to communicate.

Next babies begin to babble, and take turns with you in "babble-conversations". Down's babies are slower to begin vocalising and turn- taking (5) so watch your baby and give him time to respond.

**Imitation**

Babies also use *eye-contact*. They look at *you*, and this tends to get you to talk to them. They then begin to *look at things* around them, a ball in their hands, a car or tree from the pram and you notice where they are looking and describe the objects for them. Unfortunately research studies show that our babies are not quite so skilled as normal babies in using eye-contact and looking to get you to talk, so again, you have to be aware of this and to compensate by deliberately catching your babies attention and talking to him about what he is looking at.(6) Our babies actually spend relatively more time looking at people and faces, and less time looking around their world when compared to normal babies of the same age. (56)

This means that there are fewer natural oppportunities for you to name the objects they look at, and may explain their slower progress in learning a first vocabulary.

**Understanding First Words**

It has already been pointed out in chapter one that children's speech develops in a gradual way. They do not speak like adults even though they hear adults talk in sentences.

Children begin to speak using single words. These first words are words for people, things and experiences in their everyday world.

Then they begin to put words together to express rather more. Daddy gone, baby sleep, more drink. Slowly they begin to build longer phrases - me go car, then - me go car Daddy. At this stage they have to begin to master the rules of their language. The grammar - how to make plurals, past tenses for example and sentence construction - the way to put the words in the right order to convey the correct meaning or to ask a question.

Its a very complicated business and the fact that most children learn to understand and use a large vocabulary and to speak using a wide variety of grammatical and sentence constructions by five years of age without specific teaching, means we really rather take the whole process for granted and expect it to develop by itself.

**The physical machinery**

However, usually a child brings a whole range of skills to the task, which again we do not stop to think about. He has the sophisticated senses of hearing, vision, touch, smell and taste which allow him to experience his world in all

these different ways. He has a brain which is capable of many complex processes. It can discriminate between the different sounds, sights, textures, smells and tastes that his senses pick up and it can remember them. It can store words and store meanings and experiences. It can control movement including the movements of tongue and the muscles required for speech. Many complicated processes in the brain are involved in talking and reading. If the machinery of the brain doesn't work properly, then learning to talk will become a very difficult task.

We know very little about the way the brain and its development has been affected by the extra chromosome in our children. We know that there are some physical differences which can be seen under a microscope and some biochemical differences but we do not know how these affect the way that the brain works.

Some of the features already mentioned, like being a little slower to respond to you are probably the direct result of slower reactions in the babies nervous system (6). Poor eye-control as a result of hypotonia in the eye muscles may partly explain delays in using eyecontact. Slower responses may also reflect the fact that the babies brain needs longer to process information and organise a response (6).

We know that our childrens' memories may not function as efficiently as ours (43,75) and that they have difficulties learning the fine control of movement (2,50). These bits of information are clues which at present are not detailed enough but what we do know is enough to suggest caution.

It would seem unwise to assume the babies brain operates just like ours, that he can perceive, remember and act as easily as we do and to be on the look out for clues to difficulties we might be able to overcome. We will return to this point later.

In addition to thinking of the vital importance of brain function, we need to think about the senses, particularly hearing and vision.

If a child is trying to make sense of all the funny sounds adults use (to "crack the linguistic code"), he will have to begin by working out the meanings of single words, like cup, ball, spoon, cat, apple.

Most first words are nouns, labels for things and so he will need two important senses to work properly, sight and hearing. He needs to see clearly the things that are being named as well as hear the words clearly. If poor vision means that a ball and an orange look alike, or a dog and a cat - it will make the task of learning their names much more difficult.

Similarly, if his hearing is not too good then words like egg and leg or hen and men may well sound the same to him. This will make the task of trying to understand these words very difficult.

Unfortunately, many Down's babies do have visual problems (83) and hearing problems.(39) Any child hampered by these sensory impairments may be slow to develop. So it is vital that your baby has his vision and hearing assessed and reassessed at regular intervals. Glasses and hearing aids are often prescribed and the children usually learn to cope with them surprisingly well.

The hearing problems are usually more difficult to correct for than the sight ones. Some of the hearing problems are the result of middle ear infections (glue ear) blocking the ear. Colds, catarrh and blocked noses also affect hearing. So, do try to keep your baby as free of colds as possible.

Because your childs' hearing may not be as good as normal, it is important to make sure that he is attending, either looking at you or the appropriate picture or object when you speak. It is also important to speak slowly and clearly. A clear sign made as you speak may perhaps help any child with hearing problems to discriminate what you are saying.

**Memory and cognitive processes**
Normal children begin to work out the meanings of single words over a period of time because they hear you use the same words everyday - when washing them, dressing, at mealtimes, out walking and so on. They can remember from day to day that you always call the bed "bed" or the cat "cat". They are also able to isolate these key words from a sentence such as "Its time to go to bed", "Here comes the cat".

A child with learning difficulties will not find either of these tasks easy. Left to simply "crack the linguistic code" by listening to you talking normally day after day may not be helpful. They may find it hard to remember from day to day and to pick out the key words in each situation. They need the task simplified for them and much more practice in order to get started.

This is the time to remember what was said in Chapter I about *descriptive* speech. Try and remember to describe the things your child is looking at and doing and to be *child-centred* - to follow his actions (You can see Michael's mother doing this well on the videotape). Research studies do show that teaching mothers to make many more statements to their children in this 'child-led' way does speed up the learning in Down's children (27,78,81).

You can simplify the learning process by trying to teach your child only a few words (or signs) at a time. Use some of the many ideas for games and activities contained in Gilly's section at the end of the book to help your child. Then remember to stress these words to your child throughout the day to show him how they are used in the real everyday setting to communicate.

**Saying first words**
A child can only begin to talk, to use single words to make himself understood, after he correctly understands the words. He may be happy to imitate words before this stage, but will not use them to communicate.

We know from the observations we have made of children we work with and from research that often the child's understanding of spoken language is some way ahead of his own ability to speak. This can be most frustrating for the child. It seems, that children with Down's Syndrome have specific problems on the speech output side and find it really quite hard to produce spoken words, even when they know what they want to say. This is probably partly due to problems of control mechanisms in the brain.

Signing can be a great help to them at this stage . We have watched children sign extensively for up to a year before they can say any single words even though they already clearly understand words without the help of signs when others speak to them.

One little girl we have filmed, Zoe, was showing signs of frustration because she could not communicate effectively at 2½ yrs, until she was taught some signs. She learned to use signs very rapidly and soon spontaneously commented in sign and built her own "sign phrases". As she began to be able to produce single spoken words she quickly stopped using the equivalent sign.

All babies use gestures to communicate just before they use single words. They hold up their hands to say "pick me up", wave bye-bye, shake their heads for "no". Teaching a child to sign can be seen as simply extending a normal stage of language development, to compensate for the delay in spoken language.

We have seen from videotapes of our older children that they can often sign quite spontaneously and more quickly than they can speak even later on when trying to talk and when reading aloud. It seems that their brains can organise and produce a gesture more easily than a spoken word. They also make use of gestures to help you understand when their speech is still not clear. As the purpose of speaking is to make yourself understood, this gesturing is an intelligent strategy to help support their limited speech skills. (You can see Mark, Trudy, Stephen and Matthew using gesture in this way if you watch them carefully on the video).

Pat describes how to use signing to help your child to learn to talk in Chapter 4 and for a few of the most severely handicapped children signing may be their main way of communicating.

However, for most children speech does come and lots of practice at the activities Gilly suggests in Chapter 6 will encourage talking and improve articulation.

**Understanding and Saying simple sentences**

Once your child has a vocabulary of single words, he will begin to use two words together and then to build longer sentences. At this point coping with language becomes quite a bit more complicated.

To understand even short sentences, you have to begin to understand the rules we use. The order of words in the sentence will determine the meaning. "The

dog chased the cat" is not the same as"the cat chased the dog".

In addition to needing to work out the rules of word order, the rules of grammar such as plurals, past tenses, and question forms all need to be understood. Since the studies show that our children use simple grammar and often stick to the present tense it seems they find this 'rule-learning' quite difficult. They also use new sentence constructions inconsistently.

Specific teaching of grammar and lots of practice of new sentence types might help. While there are some studies showing that at the early one and two word stages, teaching can help your child to learn new words more quickly (64,73,74,81) and how to make two word phrases (65,76), there are no studies which evaluate programmes designed to teach more advanced grammar and sentence construction.

A recent survey of the language skills of teenage children with Down's Syndrome in our local schools, showed that they understood more advanced sentence forms than they used in their spontaneous speech and so we are just beginning a study designed to see if we can teach them to use the structures they do understand in their speech.

The best advice we can give at present is that you need to enlist the help of a speech therapist or teacher at school. There are a number of guides to help your child reach the one and two word stage and we have listed some at the end of Chapter 6. There are no simple guides available on how to continue from two words to more complicated sentences, grammar and vocabulary.

There are some good schemes in use in schools and this is why you need the help of the speech therapist or teacher. The most widely used teaching scheme in special schools in this country at present is probably the Derbyshire Language Scheme - ask if your child is working on this scheme and if so, what is he learning at present. You will then be able to work at the same tasks at home.

**Memory**

Once you get beyond the two word stage another cognitive skill becomes more important; good auditory memory. If you are trying to work out the meaning of a long sentence as someone talks to you, you have to hold the words in memory store until you have heard the whole sentence.

If someone says to you "The dog chased the cat up a tree" and you have poor short-term auditory memory, your brain may have completely lost the first couple of words by the time you hear the last one. Imagine how difficult this will make the task of trying to understand the sentence.

Some research studies suggest our children do have short term memory problems.(25,75) These studies suggest that visual memory is better than auditory memory - so signs, pictures and written words may be stored more effectively. In any case, pictures and print can be looked at over and over until

the child has had time to work out their meaning and so do not rely on good short-term memory to the extent that speech does.

**The Way parents Speak to Their Children**

As you saw in Chapter I, the way in which adults talk to their children affects their progress in learning all the complicated aspects of understanding and using speech. You have also seen how normal babies have a variety of skills or ways of encouraging people to talk to them and describe things.

These two facts have led researchers to look at the interactions of mothers and handicapped children to see what happens.

As far as the child's skills are concerned we have mentioned already that the child with Down's Syndrome may not use strategies such as looking as often as a normal baby and he may be slower to respond and we have suggested you try to be aware of this and to compensate.

But what about a bit later on? We have mentioned "motherese" in Chapter I. That is the style of speech that mothers use to their babies once they begin to talk. In other words they adapt their speech to cues the baby is giving about his understanding and skill at talking. Researchers have looked at the way Mums speak to their babies and children with Down's Syndrome to see if they are able to adapt appropriately despite the fewer clear cues from the child.

Overall, the answer from the studies is yes, mother's do adapt extremely well to their own children. (15,69,79,82,88,93)

Mothers of children with Down's Syndrome develop strategies to help the child communicate and to overcome his difficulties. They find they probably have to offer the child more support, to repeat and expand more - (as you can see on the film). (27,58)

This is good but can be overdone. It is possible to get accustomed to a style of talking mainly to the child to give an instruction "Do this...." or "Don't do that" or to ask questions "Do you want a drink" etc. The child may cope with the instruction by carrying out the action correctly without speaking and cope with the question with a one word answer. Children need to be encouraged to join in a conversation so try to think about this. Always reward all your child's efforts as much as possible and try to encourage natural talking.

Other children are a great help at the pre-school stage. Mixing with normal children is essential as they provide normal models to copy. As they play, they talk and demonstrate to the handicapped child how to use language to communicate.

**Speaking Clearly**

Finally, we need to consider articulation problems. Saying words clearly is quite difficult for many of our children (41,42) and often they are only understood by those who know them well(23). Practise at whole words will help - possibly more than practice at sounds.

Research shows that the children can speak more clearly when they imitate words than when they have to produce them from memory. (41) This fact highlights that the problem is at least partly one of establishing correct "control messages" in the brain for each word.

Talking in short sentences is even more difficult for them than single words and their articulation tends to get worse when producing sentences. Encourage your child to speak slowly. Repeat his words and phrases back to him so that he hears them correctly. Encourage him to repeat some of his speech more clearly but do not make this such a constant chore that it discourages his efforts to communicate. It is difficult to maintain the right balance between demanding better performance yet encouraging and rewarding his efforts.

As his expressive speech and language becomes more complicated so the production of the sounds of speech in words becomes more competent. Some sounds are acquired later than others and may be absent from early words and sentences. Some of the "later" sounds are sh as in (*sh*oe), j as in (*j*umper), ch as in (*ch*air), th as in (*th*ink), and (*th*at) and all children vary enormously in when they start to use these. Children with Down's Syndrome master the sounds in a similar way to others,(41) only they are usually later to emerge. Good "pronunciation" obviously depends also upon the organs of speech being the appropriate size and position and working effectively. Organs of speech are tongue, lips, teeth, soft and hard palates. Good dental care and regular treatment are therefore vital. Children with Down's Syndrome often benefit from exercises to develop more precise, less clumsy mouth movements and may need practice in maintaining some of the normal postures eg closed lips for regular breathing. Teeth also emerge late and this further hinders the development of good "pronunciation". The high arched palate common to so many Down's children affects tongue movements and also the overall quality of the voice and their tongue may be less mobile than normal. Structure and movement of the vocal cords in Down's Syndrome may also restrict pitch variation and quality of the voice so that specific exercises over a long period of time may be helpful.

As the child's speech and language experiences become more complete he will become more able in using the more subtle features of language such as changes in pitch and pace and the use of pauses. These may need careful explanation and teaching for the older child with Down's Syndrome, but should greatly improve the quality of his language and improve his ability to communicate effectively.

**Demanding and Rewarding Language**

It is clear from all that has been said so far that our children often find talking really hard work. They have to struggle to learn the language in the first place, then struggle to speak clearly and competently enough to be understood. As a result, it may be all too easy to give up - or at least to only struggle to talk when it is really essential.

Some studies suggest that the speech of children with handicaps, (I) including those with Down's Syndrome, actually talk *less* as they get older. This is not

because they have forgotten how to - it is probably because it's just not worth the bother - for two possible reasons.

First, the child may not *need* to talk. His daily routines at home, school and training centre may all become very predictable. He knows what is going to happen - he does not need to ask. Those around him every day know him well enough to anticipate his every need - so again - he does not need to ask for things. Social chat may be hard to maintain - so the opportunity or need to talk may be very limited.

Secondly, his efforts at talking may not be rewarded and encouraged. It is quite hard work to maintain a conversation with a person who only has limited skill and as a consequence, the person may get talked to much less than other people.

Think about these two points and compare the range and frequency of the conversations that you have with your child with Down's Syndrome with those you have with others of similar age.

It is so easy for a young person to become really isolated - even within the family - if they have only limited speech. Think of how much you value your ability to make friends, to talk things over - especially worries and to share the good things together as well. Try and picture how shut out you could be without your language skills. It is the realisation of the impact of poor speech on adult life that really brings home the importance of trying to do all we can to help our children from babyhood.

## CHAPTER 4

## THE USE OF SIGNING TO ENCOURAGE FIRST WORDS

**Why signs help**

The most important point to understand when thinking about teaching a child to use gestures to communicate is that it is a normal form of communication which all babies use before they speak.

Babies point and look to "ask" "what is that?" or "look at that". They wave to "say" "bye-bye". They hold up their arms to say "please pick me up".

All babies use gestures to communicate before they talk and they continue to use gestures with words once they begin to talk.

Because there is evidence that babies with Down's Syndrome have a specific delay in being able to produce spoken words - even when they understand some words and know what they want to say, signs will be an important way of being able to express themselves until they talk.

Signs may help in a number of ways:-

1. If you make a sign as you speak it encourages you to speak slowly to be sure your baby is looking at you, is listening and understanding. In other words, signing helps you to become a good language teacher.

2. Some early signs are very good clues to the meanings of words and so they help the child realise words have meanings.

3. Signs may help the child discriminate between words that sound alike - especially if he has a hearing problem.

4. Being able to sign, if he cannot speak, allows the child to communicate with you, to affect his world and make his wishes known. To discover that its fun and useful to be able to communicate will be an added incentive to try and master speech.

5. When he begins to speak, the words may be very hard to under-stand. If he signs as well, then you will know what he is trying to say and really encourage him by responding and helping him speak more clearly.

So, in recommending the specific teaching of structured signs, we are simply advocating that you develop and extend a normal form of communication to help your baby to be able to make himself understood.

Signs are used to help him to understand and to use speech - they are an aid not an alternative.

The child who is able to master speech, will drop signs slowly once he doesn't

need them, though he will make good use of them alongside his speech if he is not making himself understood. Nothing is more disheartening than not making yourself understood. One little boy loved pointing out and signing "dog" at all the dogs he saw when he and his mother went out. They had something to talk about together long before he could say the word 'dog' clearly enough for it to be understood.

A small minority of children with Down's Syndrome do not learn to talk and then signing may be their main form of communication. For these more profoundly handicapped children being able to use a small number of signs will be a life-line.

There are now some research studies which aim to evaluate the effects of teaching signs on the development of speech in children with Down's Syndrome. While all the studies are short-term and leave many questions unanswered, the following conclusions seem fair at present.

1. New words are acquired more quickly when taught using signs and speech. (63,115)

However, only one study draws attention to the range of individual differences.(94) In this study, three of the children needed twice as many trials when speech only was used to teach new words, compared with using speech plus sign and one child only learned in the speech plus sign condition. But for one child the signs were no help at all.

2. All the studies agree that the children tend to learn *signs* readily, and that although this does not necessarily lead to an increase in the rate at which *speech* develops - it certainly does *not delay* speech (63). Meanwhile, of course, the child is able to communicate using signs - until his speech develops.

3. One interesting study of thirty adolescents with Down's Syndrome concludes that they preferred a non-verbal communication strategy and that sign language can enhance their short-term memory.(97a)

In our experience babies with Down's Syndrome taught to sign do understand, communicate and talk earlier than babies not taught to sign.

However, one word of caution. We feel that signing has all the advantages already set out and enables the child to communicate before he masters speech but always emphasise your speech to the child and encourage him to try to produce verbal responses with his signs if he can, while of course, understanding his signs. There is the slight danger that you will respond so readily to your child's signs after a while, that he will not make the effort to move on to speech.

At present, the signs used most widely are taken from the Makaton Vocabulary.

The Makaton vocabulary was originally developed by a Speech Therapist, Mrs Margaret Walker, working with handicapped people in Botleys Park Hospital in Surrey.

The Vocabulary is designed to provide a core vocabulary of words and signs. For young children the words can be set out and learned in the order in which they would normally develop. Many of the signs which accompany the words are based on the natural movements of ordinary gesture and give a useful hint to the meaning of the spoken word. The signs are used to make clear what is being said, and act as an explanation of the important words in the sentence.

When talking to the children, natural sentences are used, but the signs are added to the important words in the sentence so that the signs can help the child to see what the key words mean.

The Makaton Vocabulary has become widely used in special schools all over the country and experience suggests that it particularly helps the children with Down's Syndrome.

By introducing signs, we are adding a visual symbol to the spoken word; signs should not be used without speech and function as a bridge between the natural gesture which babies and children use (eg pointing, waving bye-bye, holding up arms) and the spoken word.

**How to introduce signing**

The earlier you start to sign as well as speak the less likely the child is to make mistakes, get things wrong, and find things difficult to understand. You can begin before your baby is a year old.

A limited number of signs are introduced to the parents. These first signs should be for words that are of significance to a small baby, and include signs for the members of the family, family pets, and the signs for everyday experiences such as 'bed', 'bath', 'drink', 'up', 'down', 'look', 'home' and 'car'. The initial number of signs is kept to a maximum of 20. The signs should be demonstrated as it is very difficult to learn a movement from a static picture. The signs should always accompany normal grammatical speech as naturally as possible. Nobody should make a "thing" about it but just try and add them to every day life.

Of course there will be times when it is very difficult. If you have a struggling baby in your arms then a two-handed sign is out of the question but even using half of one can help and once baby is lying on the floor, sitting in a chair, or lying in the pram, there are many opportunities for speech and sign to go happily together. Parents don't have to worry if they are right- or left-handed, the sign can be done just as easily with either hand, but is obviously important that your child is looking at you when you do it, so sometimes you will need to attract his attention before you start.

The baby will soon learn to watch and eventually will turn to his mother's face and hands if he wants something explained or sorted out for him, and in this way he can learn much more easily.

If she is going to pick the baby up, then she will make the sign for "up" before she does so. The same will apply to signs like - bed; wash; bath or drink etc. If the child goes out, then the "home" sign will be used just before home is reached. Just as you would say "nearly home now" to any small child so the parents are encouraged to sign "home" at the same time. If Daddy is about to come home from work, "Daddy's coming" will be signed as well as spoken.

The baby has to learn to understand signs before he can use them, just as he does with words, so we do not expect the baby to start to sign immediately, but the initial few months are very important. Not only is the child getting accustomed to the use of the visual signs accompanying speech, but also the parents are learning to develop the child's ability to follow directional signs, and thus concentrate on more appropriate information. It is lovely to be able to point things out to your child and help him to see - the pretty flowers - the pussy cat or the aeroplane and know that he is enjoying the experience.

Around this time the parents can also tell when a child recognises the signs and speech and is understanding them. This development of watching the parents' hands and face can be quite marked in some children, and when it is well established signs can sometimes come spontaneously. If not the mother is encouraged to move the child's hands to the correct position, all the time encouraging speech and signs together. Only when this has been achieved with the first few signs is a further number of signs added. Remember to keep the signs taught appropriate to the baby's age and surroundings. Signs for animals, food, cars, trains, planes etc. For example, some of the children's earliest signs apart from "drink" and "food" have been for "light" and "telephone". After all, when the telephone rings any activity stops and the phone is answered, and a light going on makes a big difference to a darkened room. Gradually the child will start to use the signs themselves to communicate particularly when they realise that they can achieve something with them.

This is about the time when toys and pictures are being introduced. The baby will often have a favourite toy and begin to look at books and listen to simple rhymes. A very good way to teach the child at this point is to find simple clear pictures of everyday objects like beds and chairs, cars and cats, mount them on stiff card and cover with some sort of protective covering and use these as well as some of the better of the early books that are now available. These cards are very useful because they don't get torn as easily as books, they can be looked at one at a time and there are lots of simple games that can be played with them - like "find the cow" and "what's under there?"

To start with the baby will use one sign at a time - just as a child will first say "drink" when he means "Please can I have a drink" so he will just make the one sign.

You will then reply in exactly the same way using natural sentences like "Here's your drink" or "do you want a drink?" and gradually as he becomes more confident in using the signs you can encourage him to go to the next stage. Getting him to add another sign so that little sentences like "more drink"

or"drink please" can gradually be built up. In this way the child can be encouraged to use more and more different sentences. "Daddy's drink","my drink","little drink","big drink","drink gone" are all little sentences he can be encouraged to build for himself. This way he can learn the value and use of language and think for himself.

All this time you are using one or two signs with your sentences. If you say"Do you want more drink?" then you look at him and sign *more* and *drink* as you say it. And of course you encourage him not only to sign"more" and"drink" but make his own attempts at the words himself. He may only be able to say"0" for"more" and"I" for drink but gradually the words will come clearer.

From the beginning, the child will have been absorbing signs like "what","where" and"more" and"no" and he can now be encouraged to use these as well as the basic naming words. This way he learns to sentence build for himself and this is where he learns how useful language can really be. When *he* can ask questions he will start wanting to take part in conversation and if he has learned some signs he will have the means to do it.

If you are signing to him, you can help him to understand other things too - Dogs can be big, small, furry, sleek, in fact they come in all shapes and sizes, but they are all dogs and not cats. If you can use the same sign for dog each time you see one, you can help him to learn that the word"dog" applies not just to one animal, but to lots of animals, and pictures and toys as well.

Some children are so handicapped that learning to talk is too difficult for them, and signing may be the only way they will ever be able to"talk" to us. However, nearly all children with Down's Syndrome are capable of learning speech. If you encourage your child to do so, as soon as he is ready, - as you would a normal child - he will soon learn that speech can do much more for him than signs, and as soon as he can make himself understood he will drop the signs himself.

If you always speak and sign together, and encourage him to do so, then you will find that his signs will be accompanied by his early attempts at speech. These you can encourage and help him to improve, whereas without the sign his attempts at the word might never have been recognised. Thus a very important opportunity to encourage him and help him to speak clearly has been missed. In one family a little boy wanted to talk about the new baby - he loved his bab(*ee*) but he also liked to point out tr(*ee*)s, he was able to do both because the signs are so different.

As with normal children some children with Down's Syndrome try to "get by" with doing as little as possible, but provided you speak and sign together and help them to do the same, the children will get the opportunity not only to practise words more often, but also find that speech is more effective. However, the signs are always there to fall back on if speech is still in the early stages and not clear enough to be understood. Some words like"street" and"school" are very hard to get your tongue round and sometimes they will need extra help with saying words clearly.

All children find saying words with many consonants in them difficult. They often miss some out while they are still learning how to say the words so school becomes"cool" and star"tar". Children with Down's Syndrome find these sound sequences very difficult and if emphasis is put on getting all the sounds in words just right to begin with it can cause the child to give up trying, he just can't do it, but if after he has heard and learned the words and still can't do it then a speech therapist can often help him to listen more accurately and sort the sounds out.

At what age he drops the signs will depend on his general learning ability. If he is a lucky child and can learn slowly and steadily, and has started early enough, then we have found that some children have dropped the signs by the time they are five. Others have less learning ability and will therefore take longer to go through the language learning process. They will be older before the signs fade.

Probably, it will be Mum who will sign most, but it will be a great help if Dad and the rest of the family join in too. Children in particular are good signers and take to it easily and naturally - they are not so inhibited as adults - so brothers and sisters can be a great help.

In any case, the baby is likely to spend much of the first three years of his life with his mother and it is with her that he will learn his basic skills. If he has learned to look for explanations during that time, he will have already learned enough about what words mean to deal with the outside world later on.

He will not get so much from people who are not signing to him, but most people use gestures of some sort and he will have to rely on these. He will have learned however to look for them and combine them with his better understanding of words to cope perfectly adequately with people who don't sign. Similarly, as the majority of children learn quicker from what they see rather than what they hear, the signs your child will be using will not look very different to other children than natural gestures they themselves are using to make sense of language. In any case by the time he goes to playgroup, if he has started signing early enough, he will already be understanding a lot of the speech and be able to take a much fuller part in the general activities, thereby learning more speech for himself. And of course once at playgroup, provided he can understand what is going on, and knows how to interact with other children and adults then he can learn so much more from play with other talking children.

If you walk into any nursery class you are bound to see the children all sitting around at some stage of the day singing rhymes like"Heads and shoulders, knees and toes" pointing to the various body parts so that they learn them. This is so natural that we take it for granted and if you told the teacher she was"signing" she would be amazed. Many of the simple finger or action rhymes are teaching a child where things are - what they do.

Speech is only the final product of a very long learning process. It starts with listening to sounds then understanding what those sounds mean - then

remembering the sound patterns of words and finally being able to repeat these sound patterns clearly enough for someone else to understand. The sound patterns can be very similar but have very different meanings. Words like: bat, pat, cat, and mat have one different sound at the beginning and each one has a very different meaning.

One mother worked out that in the early stages her child with Down's Syndrome was unable to distinguish the difference between any word which carried the "ee" vowel in it. So that words such as 'cheese', 'see', and 'tree' were all identified by her daughter as being the same. Another child, when her father said 'look at that horse' signed 'house'. It is no wonder, therefore, that they take a long time to sort it all out, and may limit their language to naming objects which can easily be identified.

The children can confuse clear pictures, and even objects. If they can sign you can understand and sort out their confusions. A 'comb' was identified as a 'fork', and another child identified an 'iron' as a 'telephone', possibly because of the wire attached to both. The picture of two spoons was identified as a pair of glasses and one little boy signed 'balloon' when he saw the full moon in the sky. If such tasks are too difficult for the child to understand he may give up and 'switch off'. Fortunately, most of the time, when people are talking to children, they help them out, by pointing, picking up objects they are talking about, looking happy or cross - so the child can get some idea of the meaning of words.

How much easier it would be for him to learn if that help were there all the time, if gestures used helped him to look in the right place and explain the meanings of important words.

If children with Down's Syndrome are to master a good vocabulary, they are going to need as much help and in as many different ways as possible to make sense of, and use those very complicated sound patterns we call speech.

People are talking all the time and use many different words, The child who needs to learn a little at a time in order to be able to take it all in, finds it much easier if he can "see what is meant" as well as "hear what is said".

## CHAPTER 5

## READING IN CHILDREN WITH DOWN'S SYNDROME

**Introducing Reading**

Many children with Down's Syndrome can begin to learn to read at about the usual age of five, some even earlier.(19) These children seem to be able to learn and remember whole words just as easily as other children of their age. If the child can remember printed words then we feel this skill should be developed.

However, it is essential to understand that teaching reading to a young child with Down's syndrome is quite a different process to teaching reading to a normal child.

Our child of three or four will probably only be speaking in single words. He will only understand and use a fairly small vocabulary. He will not yet have begun to master the rules of grammar or to be able to build sentences.

If he can learn to read at this stage, then his reading must be fitted to his stage of language development. Vocabulary for flashcards should be chosen from words he uses initially. Once he finds reading easy, then new words can be introduced on flashcards and games played to teach their meaning.

New vocabulary, new grammar and new sentence structure can be developed as part of the reading programme.

When most children learn to read they already understand a large vocabulary and most of the rules of grammar and word order - so they do not have to be taught these as they learn to read. They are simply learning a visual code for a spoken language system they have already mastered.

Some of our children are able to learn to read before they speak. We have included some examples from children we know. Digby began to show he could read by pointing correctly to body parts. Zoe showed she could read by signing correctly. Joanna showed she could read by saying the correct words.

### CASE HISTORIES

**Zoe**

Zoe is just 3 years 11 months old. She said her first words at 3 years 5 months. She now uses a vocabulary of some 180 words and is just beginning to put two words together.

At 2 years 3 months, when we first met Zoe, she had no speech and was quite frustrated, resorting to banging on her high chair or shouting to make herself understood.

At this time, her mother was introduced to Makaton signing and attended a workshop to learn Makaton. She began to sign to Zoe at home and in two months Zoe was using signs. She used four at 2 years 5 months, and learned

Using a puzzle for a language lesson.

Gilly teaching Zoe to sign.

Zoe signing to Mum as she looks at a book.

Zoe's first reading lessons.

Digby reading "breakfast" words.

"I've read it, aren't I clever".

Digby playing a reading game with Mum and Sue.

It's not all work here!

to use thirty-seven signs altogether in 5 months. In one year, she learned over a hundred signs which she used spontaneously. She built two-sign phrases on her own and at this point, aged 3 years 5 months, began to say her first clear words.

After six months she now uses some 180 words and her parents are finding it increasingly difficult to record them as new ones appear almost daily. She is just beginning to put two-words together.

Zoe was introduced to flashcard reading at 3 years 5 months and learned to match, select and sign or name each word in 8-10 days. She reads twenty words at present. Mum has not extended the reading rapidly, as Zoe is so busy mastering speech and has just started at a normal playgroup, being able to read her name on her chair! She also knows more colours than many of the normal children!

Zoe's understanding of language is way ahead of her spoken language and her parents are firmly convinced that the introduction of signing was a real breakthrough for Zoe, allowing her to communicate, enjoy it and get the whole process of mastering language started. You can see Zoe signing and reading on the videotape.

**Digby**
Digby is now 5 years 5 months. He has a very large vocabulary and speaks in mainly 3 and 4 word utterances such as"Where my boots?""going home dog","Meg I am coming","This is my pencil","put it on there".

Digby has a sight vocabulary of some 900 or more words. He reads a variety of books and is now attending his local primary school. Digby began to learn to read before he had any speech at all. Mum began to teach him with flashcards at 2 years 1 month. She used words for body parts including head, knee, foot, hand. He learned to identify new words correctly at the rate of about 1 new word a week at this stage.

After one year, at 3 years 1 month, Digby was reading 51 words and using some 50 plus words in his spoken vocabulary, according to Mum's diary records.

By 3 years 4 months he could read 100 words and the first 4 books (1A, 1B, 2A, 2B) in th Ladybird Reading series.

At 4 years 3 months he could read over 500 words and enjoyed short books. He likes to read a book he can finish.

Like a number of other children, Digby had to be taught to read small print initially, by pairing small and large versions of the same word. Once he had"relearned" three words in small print he got the idea and knew all his other words correctly in small print without any more teaching. In his Mum's words:

"He initiated reading books himself by picking up a book and trying to read it, so I bought him the Ladybird First reading book just after his third birthday. He loved it and learned to read it very quickly.

Digby's speech therapist devised a number of language teaching activities using his reading skill, and you can see an example on the videotape.

**Joanna**

Joanna is now eight years old. At 2 years and 7 months she was speaking in single words and had some fifty words in her vocabulary when she was introduced to reading as a member of our first research group.

Joanna was given a matching task to learn. This was a set of four flashcards and a lotto baseboard with the same four words on - the names of the family. She was happy to match pictures, but not interested in matching the flashcards. However, Mum went on undeterred and by the time the hometeacher returned one week later, Jo was naming the four cards correctly. She learned twenty-five words in a month and we were all amazed by her progress.

We have film of her from this age and she is one of the children shown in our 1983 videotape.

By the age of five Joanna was reading happily from simple books with obvious understanding and had a flashcard vocabulary of some seven hundred words. She started school in the local village primary school and has continued to make good progress.

Our own experience and the records provided for us by many parents, strongly suggest that some of our children find remembering words they read easier than remembering words that they only hear.

There may be a number of reasons for this:

1. His visual memory for things he sees may be working better than his auditory memory for things he hears.

2. Using sight and hearing together (multisensory input) may help.

3. The memory demand is less for print - written words stay put and can be inspected at leisure, spoken words are only available for a few seconds.

4. Written words can be seen as distinct units. This may help the child learn simple sentence constructions such as "Daddy gone", "car gone", "ball gone". Later it may help him to begin to build longer sentences. Flashcards make words tangible. They can be handled, ordered and rearranged.

**The Structured Teaching Programme**

The only way to find out if a child can learn to read is to try teaching him. The methods described in the book have been used successfully with children in the Portsmouth Down's Syndrome Project. They are designed to make the

teaching as simple as possible and to increase the child's chance of succeeding.

Each child must work at his own pace. Some children find reading exceptionally easy and seem to remember words very easily. Other children need much more careful, repetitive practice but still master a useful vocabulary in the end. Some may be later getting started and some may not read at all (other children show an equally wide range of reading ability).

If a the child is able to learn to read, this reading skill is an important aid to his spoken language development - it can be a"way-in" to language. It will also give him a headstart when he goes to school.

## THE STRUCTURED TEACHING PROGRAMME

**A word of advice**
Two cautions before you begin:

1. No two children are identical; activities one enjoys, another does not. The basic steps in the programme are important but do not be afraid to adapt the ideas to develop activities which your child enjoys.

2. Learning must be fun to succeed. A touch of firmness may be necessary at times to persuade a child to sit still, attend and complete a task, but a warm, patient supportive attitude is essential. *Remember* lots of praise and encouragement works wonders and do try not to show your disappointment over failures or slow progress.

3. Each child must work at his own pace and thoroughly master each step before he moves on to the next.

**Pictures then words**
In our work, reading is taught as part of a language programme, so that even if the child is not able to learn to read yet, he will benefit from the language teaching activities.

The first part of the programme concentrates on teaching the child to understand and use a first vocabulary, using pictures. The child then moves on to working with printed words on flashcards when he is *using* some 50 single spoken words. However, this should only be taken as a guide. If the child can match and select pictures, but cannot name them you can still try flashcards because of the possibility of specific delay in being able to produce spoken words. We would see Makaton signs as equivalent to words so 50 spontaneous signs equal 50 spontaneous words.

The teaching exercises are the same for pictures and for flashcards, so the child is used to the *activities* before moving from pictures to words. The vocabulary being used for both language and reading will be the same.

**The Basic Teaching Principles**
1. In order to recognise and name an object,picture or word, the child has to be able to do several things, and these are taught as separate steps.

First the child has to be able to discriminate the object, picture or word from other similar items. That is - *see* (in the case of objects, pictures or written words) or *hear* (in the case of spoken words ) the vital differences.

Sometimes this is easy because the items are different in many ways - cup and horse for example - both *look* and *sound* very different. But pictures of a ball and an orange will look very alike to a baby. Similarly, the words cat and hat *sound* very alike.

Unless the child can *see* the difference between a ball and an orange, he is going to have great difficulty learning the correct word for each.

Similarly, unless he can *hear* the difference between the words hat and cat, he will have great difficulty learning to understand and then say them.

The first step in the teaching programme is, therefore, to teach the child to DISCRIMINATE - to pay attention to the important details and differences - and to begin to associate the correct NAMES with the correct picture or word.

We call this first step *MATCHING*.

**Teaching MATCHING**
The child will start with picture matching. Choose two pictures of everyday objects. You will need two identical pictures of each object.

(A list of useful picture materials is given on at the end of Chapter 6) Put one picture of each object in front of the child, on the floor or on a table - wherever he is comfortable. Give the child one of the duplicate pictures and say

"Here is a (cat, orange ----). Put it with the one that is the same"

Guide the child to complete the task correctly. Then use the same procedure for the second picture.

*Success* is all important - make sure the child completes the task correctly each time by physically guiding his hand, prompting and praising him.

This technique is called *ERRORLESS LEARNING* and increases the child's speed of learning. If he consistently practises *wrong* responses, these will be very difficult to correct.

**Add new pictures, one at a time**
Once the child can MATCH two pictures with no hesitation, add a third one. Once this is well-learned, add a fourth.

At this stage, simple LOTTO GAMES will be useful - providing they have no more than *FOUR* PICTURES TO CHOOSE FROM.

Remember - the *more* pictures the child has to search through at one time, the more *difficult* you are making the task - so start with only 2 pictures, then slowly build up until the child can *MATCH* eight or more at once.

(It may be necessary to teach each *new picture*, by pairing it with only one old one - before adding it to a set of three or four pictures). To guide your choice of vocabulary, a list of the first words children use is given in Chapter 6.

2. The second stage the child needs to master is learning to *associate the name* with *the picture*.

He will begin to do this while he is practising the MATCHING tasks because he will hear you name the pictures he is matching and he will understand names correctly before he can say them.

We call this second stage *SELECTING*.

**Teaching SELECTING**
Use picture cards that the child has now learned to match with ease. Lay two or three in front of him and say

"Give me the (cat, orange, .....)?"
or
"Show me the (cat, orange, .....)?"

Guide him through the correct response, so that he learns in an ERRORLESS way, as before.

Learning to hand you the cards and to point are useful skills, which can be used for all kinds of teaching.

Once he can *select* two pictures correctly, add a third. Build up the number of pictures slowly, until he can choose any picture correctly from eight pictures.

Next, the child has to be able to *name* the picture himself. This stage seems to be more difficult for the Down's Syndrome child and he may find signs easier to produce than words. He will also have ARTICULATION problems which means the words will not be clear, but do praise his efforts.

**Teaching NAMING**
Show the child the picture and say

"What is this? It is a (cat, orange, .....)? Can you say cat?"

Encourage the child to *IMITATE* the word with you *and* repeat the word to him after he has said it. This will help him to improve his pronunciation.

Here again - use ERRORLESS techniques - prompt the child with the correct answer, *until* he is able to say the word by himself, without hesitation.

These three basic teaching stages, MATCHING, SELECTING AND NAMING can be used to go on building the child's initial vocabulary from picture material but *do remember* that you must also use the words during the day, when talking naturally to the child and when playing in order to teach him to expand the meanings of the words and to learn to use them to actually communicate.

Once the child is using about fifty single spoken words or signs, we introduce READING using flashcards.

**READING**
We teach reading by the "Look and say" whole word method and make bold flashcards for each word. The flashcards are in lower-case print, black letters on white, 1" high. They can be seen in the photographs.

The child learns to read his first flashcards in the same way as he learned to name pictures.

First he learns to MATCH, then to SELECT and then to NAME the flashcards. This may be easy for the child or it may take weeks of patient practise.

Just as you have done with pictures, start with only two or three words. We find the children often enjoy learning family names first.

**Individual books**
You can add other activities to the flashcard work. Make the child his own READING book with a large scrapbook. Paste in family photos - one on each page. Write the name below as it appears on the child's flashcards. He can then first match his flashcards with the names in the book.

New pictures can be added to the book as you introduce new flashcards.

**Two word phrases**
Once the child has a small sight vocabulary, you can build his words into two-word phrases - as he would be speaking - such as

| | |
|---|---|
| Daddy gone | Mummy sleep |
| car gone | baby sleep |
| ball gone | kick ball |

You will find much useful information to guide your choice of first vocabulary and two-word phrases in two books by Bill Gillham based on his work with Down's Syndrome children. The books are called "The First Words Language Programme" and "Two Words Together". The books give lots of useful ideas for other activities to build on the simple first stages outlined in our programme.

**Comprehension Games**
In order to be sure that your child does understand the words he is reading, you can play comprehension games. Give him a set of pictures and the appropriate flashcards and ask him to read the word and put it on the correct picture.

Give him little written requests to carry out.

We do not find any problem with comprehension, because the same vocabulary is part of the language programme and we are constantly observing the child's understanding and use of language.

**Building on these early beginnings**
You will probably find that once your child has learned about 20 flashcards in these 3 simple stages, he will now realise that the aim of the game is to *NAME* them. He may then be able to do this by just working with the flashcards and repeating the names with you.

We know that a large vocabulary of words can be learned in this simple "look and say" way. One of our five-year old Down's Syndrome children learned to read 600 words like this.

However, it is useful to begin to draw the child's attention to the shapes and sounds of letters and to teach some PHONICS - if the child seems able to learn this.

PHONICS simply means teaching the child letter sounds and how to blend them together to work out a word eg c - a - t makes cat. A child can use this knowledge to help him to work out unfamiliar words he wishes to read. It will be useful if your child can cope, but it is not an *essential* stage in learning to read.

Drawing the child's attention to letter shapes will help him to *look* closely at words and to identify *visual* differences between words such as cat and mat, book and look, even if he does not master sound- blending.

Recent research has shown that normal children benefit from teaching activities which involve making words with plastic letters (14). For example, you can make 'hen' 'pen' and 'men' - showing the child that the common sounds in these have common spellings - and so introduce phonics in this way.
You can also use your plastic letters to make short sentences - showing the child how to make new ones with a basic structure - for example -

Daddy is coming
Mummy is coming
Granny is coming

- or how to change the structure to form a question like "Is Daddy coming?"

It is a good idea to introduce writing as soon as possible into the reading activities, even if the child only copies over words you are writing for him to start with.

**Longer sentences**
Once your child can read a number of words, you can begin to build them into longer sentences and to add words like THIS, HERE, IS, THE and A.

You can then use his reading skill to encourage him to say "Here is a dog" instead of "dog here" and "The ball has gone" instead of "ball gone".

Unfortunately, reading longer sentences and understanding them is a much more difficult process than reading single words, for several reasons.

To read aloud, a child has to organise a sequence of words and the ou hildren find this difficult to do. Their articulation tends to be much worse in this situation than when reading single words. Practise is the only thing that will help - plus patience. Give the child plenty of time to read slowly.

To understand sentences, the child has to hold several words in short-term memory before he can work out the meaning, as the order of the words may be important.

For example, Mary hit Paul is not the same as Paul hit Mary.

When a child with Down's Syndrome is reading, he needs to be given more time to cope with the demands of the task. He has to work out the words, hold each one in his memory, then work out the meaning.

We know that when most of us read, we do not read every single word, but use our knowledge of language to help us.

The child with Down's Syndrome will not have as much stored knowledge to help him as the normal child, so will read more slowly by working out each word. This does not matter, so long as he reads with comprehension.

**Is it worth the effort?**
There is no simple answer to this question. We know that some of our children can learn to read competently at 5 or 6 and can have *reading ages* way ahead of their mental ages or even their actual ages. These children can read for pleasure and it is undoubtedly a useful skill.

For other children, only a small vocabulary may be mastered, but it can still be useful for helping their language development. It is possible to practice quite a range of short phrase and sentence structures from sight vocabulary of less than fifty words. For older children mastering a social sight vocabulary based on words they will come across everyday, such as Ladies, Gents, and Bus Stop can make quite a difference to their adult lives.

At present, we cannot predict the outcome for any individual child. We can only say, try it. See how much time your child needs to spend on learning words. If it is too difficult for him, or requires too much time which could be spent on more useful practical learning - then probably its not wise to pursue it for the moment.

However, we believe many of our children can benefit from learning to read early and hope that parents and teachers will try our methods.

A video programme showing our children learning to read, is available for a nominal charge, from the author. It will help to demonstrate the stages you have read about.

More research is needed. Our methods can - no doubt - be improved. We hope to continue our research and would welcome comments, criticisms and progress reports from anyone teaching their child to read.

One point to remember is that the activities must be fun and meaningful for the child. Once he has mastered a small vocabulary from flash cards, do try and use this is an interesting way.

Make short messages for the child to carry out such as"shut the door" or"where is the cat" - you can then play"read it and do it" games.

Help the child to write down what he wants to say and then to read it. Reading from a reading scheme can be a very dull and meaningless activity if all the child does is just read the next page - and never learns how to put his reading to use in his everyday world.

## CHAPTER 6

## ACTIVITIES TO ENCOURAGE LANGUAGE DEVELOPMENT

**Some general points**
It is never too early to start talking to your child, but before he will talk, he must learn to look, listen, concentrate and co-ordinate muscle movements. He must also want to communicate.

Always encourage your child to look and to listen. Particularly encourage him to look at your face when you are talking. Try playing games like 'peek-a-boo', 'pat-a-cake' and 'round and round the garden' to help this kind of behaviour.

Always encourage your child to look at you when you talk or sign as this aids his concentration and gives him the extra help of having visual clue.

It is important to remember that a child must understand what a word or sign means before he will use it. Children usually understand words before they are able to say them. The child needs to hear a word used many times in different contexts before he will begin to understand it, so don't be afraid to be repetitive.

Some parents find it useful to set aside a particular time each day to concentrate on helping their child's language development. It is sometimes easier to get things done if they become part of your daily routine. Having said this, the whole day is full of opportunities for language stimulation and learning and for you to reinforce any specific work you have already tried with your child, Try to make your specific activities fun as learning through games is much more effective. Using a "posting box", for example can make an object picture naming task more exciting for your child (post the picture after he has named it). He needs to be interested to learn.

Communication is a two way process and has to be enjoyable for your child. However, give him time to say things and try not to over-load him by talking too much. Take the lead from him and respond to his communicative behaviour, as well as initiating your own. Don't force your child to talk, it may put him off!

**Games to Encourage - Listening and Looking (Attention)**
Looking and listening are very important skills needed for learning to understand and use language and are therefore necessary to be taught, practised and built upon.

**Looking**
Attract your child's attention by clapping your hands, calling his name or shaking a rattle, then praise him when he looks at you. Once you have his attention, try and hold it for as long as possible by talking, babbling, (playing with sounds), smiling, pulling faces at him and praise him as he succeeds. If he begins to copy your facial movements or sounds keep encouraging him. Feeding is a good time for gaining and maintaining eye contact with your baby.

Hang bright objects or mobiles over his cot and encourage him to look at them by shaking them. Then put them near enough so if he moves his hand he will touch them and move them.

Gain his attention by holding some brightly coloured object in front of him them move it slowly to one side and see if he follows it with his eye gaze. Move objects away from him and see if he grabs for them.

Using, for example a Jack in the ball, or a Jack in the box, encourage the child to look at the box or the ball then hold his attention for a few seconds, press the button and the Jack pops up (a good intrinsic reward).

Play 'Peek-a-boo' and 'Round and round the garden' to help gain attention and eye-contact.

**Listening**
Give him a rattle to shake, join in with your own rattle and when he shakes his you shake yours, stop when he stops and then start again when he does. You could try this the other way round. You start by shaking the rattle and see if he joins in. If he does, then continue rattling then stop and see if he stops. Use different noise makers to attract his attention, squeaky toys or perhaps your own home made ones, eg rice or dried peas in different jars. Move the noise makers away and see if he reaches for them. Move them slightly to one side and see if he follows with his eyes. Show him a noise maker, shake it then hide it under a rug or in a box still shaking it and see if he looks for it. See if he turns his head as you move the sound maker away from him to one side. Draw his attention particularly to household noises, eg a clock ticking, a spoon stirring in a cup, running tap water, telephone ringing, kettle boiling etc. Show him what's making the noise, talk about it, tell him what it is. When your child can sit by himself or supported, a good game for looking and listening is pushing a ball between yourself and your child. But before you push it to him call his name and show him the ball, telling him what it is. Then as he looks at you push the ball to him. Gain his attention before he pushes the ball back to you if possible.

**Teaching First Words**
Children need to be able to use a variety of single words before they begin to join two or more words together. For example, as well as naming objects and people, they need to be able to understand and use a variety of different action words (verbs); sleep, wash, eat. They also need to be able to use social and greeting words; hello, goodbye, yes, no, more, again.

In this section on teaching single words, the first part deals with specific activities for comprehension and expression of the different types of naming, action, social and greeting words. The second part discusses doll play and the final part deals with utilising daily activities for language, teaching and learning.

In the first part some activities may have been suggested for just teaching the

names of objects and not teaching clothes and food names but the same activities can often be used for teaching different things.

**I. Teaching Nouns**

**Names of objects**

**Comprehension games**
Gather together a box of common objects, eg cup, car, keys, brush, flannel, toothbrush, book, shoe, brick, ball, pen, spoon, plate, etc (increase the choice of objects as the child shows he understands these verbal labels).

(a) Place six objects in a box with a lid. Show the child inside the box and then shut the lid. Now ask the child to 'find the car'. Either open the lid yourself or let him open it and find the object and remove it.

(b) The same as (a) but use a large bag instead of the box.

(c) When sitting at a table, place some objects (say 3-6) in front of the child and ask him to 'give me the ball'.

d) Choose several large objects and put them in prominent positions around the room while the child is looking. Then ask him to 'bring me the car'. He has to go to the object and bring it back to you.

(e) Names of furniture can be taught by giving the child something and asking him to 'put it on the table' or 'on the chair' or 'on the bed'.

(f) Using picture material may be more difficult for your child but if he is interested try cutting out pictures of objects and sticking them on to separate pieces of card. Lay three or four on the table in front of your child and ask him to 'find the ball'. The child could then post the picture into a posting box.

**Expression Games**
(a) When you put toys away after a game or get them out for a game, ask the child to name them.

(b) Hide two objects behind your back, putting one in each hand. Hold your hands in front of the child and let him choose a hand. Turn your hand over and show him the object hidden which he then has to name.

(c) Put a cloth on the table. The child has to close his eyes while you place an object under the cloth. He then opens his eyes and has to find the hidden object and then name it.

(d) Put some objects into a box with a lid. The child has to pull out an object with or without looking at it and name it.

(e) The same as (d) except with a bag.

(f) Ask your child which toys he would like to play with and give him a choice; 'would you like the car or the bus?' Encourage him to tell you rather than pointing to the object he wants.

(g) Have a selection of objects on your lap. Select one, the child names it and then posts it into a posting box or puts it into another container such as a bag or box.

(h) Picture Lotto. Put the separate cards in a pile and take turns to turn one over, name the picture and match it with the picture on your board.

(i) Using cut out pictures on card, make a pile and take it in turns to turn one over and name - you could win bricks if the word is given correctly, or you could post the card in the posting box. For both comprehension and expression a useful and interesting activity to try is to go through any old magazine or catalogue and cut out different pictures of an object which you choose. Then either stick the pictures on to separate pieces of card or into a scrap book, You could try a different object each week or every two weeks.

**Name of Food**

**Comprehension Games**
(a) Always tell the child what he is going to eat or what he is eating.

(b) When he has a few different foods on a plate, ask him to take a piece of potato or a piece of carrot as his next mouthful.

(c) Make toy food with plasticine or equivalent and ask him to identify the things you have made.

(d) Put three different types of food on three different plates and ask him to"point to the apples","point to the sugar","point to the tomatoes".

(e) Let him watch while you are cooking and to start with, name the things you are going to put into the dish. Later, try asking him to give you the things which you need.

(f) Talk about things you might eat for different meals, eg breakfast, dinner, tea etc. Cut out pictures of foods, or perhaps draw your own and stick them in a scrap book to talk about at bedtime or a quiet moment.

(g) Pretend to go shopping - have a few packets of food on the table ask your child if you can have the cereal/bread etc.

(h) If you have any pictures cut out of different foods on separate pieces of card, place three of four of the cards in front of the child and ask him to 'find the bread' and then post the card into a posting box or give it to teddy who is watching the game.

**Expression Games**
(a) Give your child a choice in selecting food. If, for example, you are offering fruit, show him an apple and a banana and ask him which one he would like, encouraging him to tell you rather than to point.

(b) Ask him what he is eating when he is having his dinner.

(c) Put three items of food on a tray. Ask your child to name them and then take one away and ask him which one has gone. Show him the one you've taken away if he finds this difficult.

(d) Using the cut-out pictures, turn the cards face down on the table (as in the game of pelmanism). Your child then turns over a picture card and names it.

**Names of Clothing**

**Comprehension Games**
(a) Make a toy clothes line. Choose some clothes, either dolls clothes or babies clothes and put them in a pile with some pegs. Ask the child to find the 'vest', 'sock', etc. Then help him to hang them on the line.

(b) Using a mannequin with clothes that you can put on or take off, ask the child to take off coat, trousers etc and once they are off put them in a pile and ask him to put them back on.

(c) The same as above with dressing a doll.

**Expression Games**
(a) Name clothes as you put them on the toy clothes line and encourage the child to name them.

(b) Ask the child which piece of clothing to put on the mannequin or the doll next.

(c) When loading the washing machine, get the child to name the clothes as you put them in or to tell you which ones to put in.

**Names of Body Parts**

**Comprehension Games**
(a) Sing a nursery rhyme. such as "head, shoulders, knees and toes", with your child and help him to point to his head etc. Then gradually stop doing the gestures with him and see if he can do them by himself.

b) In the bath give him a flannel and ask him to wash his face, wash his feet etc.

(c) In doll play ask him to wash his dolly's hands, face, tummy etc.

(d) Ask him to dry his face etc after a bath and to dry dolly's face etc.

(e) Sit in front of a mirror with him on your lap and ask him to point to his eyes, your nose etc.

**Expression Games**
(a) Encourage the child to join in with rhymes (see Comprehension (a)).

(b) Encourage the child to tell you which body part he is going to wash and when playing with a doll encourage him to ask you to wash dolly's face etc. You say 'what shall I wash?'

**2. Action Words**

**Comprehension Games**
(a) To begin teaching your child simple actions, do the actions together. Play a game where you say 'let's run', let's sit down', 'let's sleep' and actually do the action with the child. Then gradually stop doing the action yourself and give the child a command.

(b) With a favourite toy ask the child to make teddy sit down or drink or sleep etc.

(c) Sing nursery rhymes involving action words for example, 'Here we go round the mulberry bush'. When you say 'this is the way we wash our hands', 'this is the way we brush our teeth', 'this is the way we run...', perform the actions and encourage the child to join in. Then gradually stop doing the action yourself and see if the child can do it alone.

**Expression Games**
(a) Let the child take a turn at asking you to run, walk, sleep etc. It may be a good idea to involve another child or another adult so that you can each take it in turns to make it more of a game.

(b) When playing with a favourite toy, you should have a toy as well and ask the child what you should make your toy do.

(c) Encourage the child to join in with the nursery rhymes.

**Teaching Verb Particles** (On, Off, Up, Down etc)
Although specific activities could be suggested for teaching verb particles, it may be more meaningful for the child if you concentrate on one or two verb particles and try to use them as often as possible in relevant situations throughout the day. If you were concentrating on 'On' you could use it many times throughout the day, eg when dressing in the morning 'put your pants on, socks on'. If you go out 'put your coat on' and the same with 'off', If you choose 'up' to concentrate on then talk about going up the stairs, pick the child up and say 'up', go up the slide and so on.

**Use of social words** (Hello, Goodbye, Yes, No, More, Again)
With this type of word, the times during the day when opportunities for your using the word arises are plentiful and should be exploited. For example,

'more' could be used in brick play if you were building a tower, when you could say 'put one more on, more, more bricks'. At mealtimes offer the child 'more juice', 'another biscuit', 'another apple' etc. The same applies to names of people in that constant use and exposure to the words will help the child learn their meanings and hopefully encourage him to use them himself. If you are going to teach the names of animals and you have pets of your own start with their names. Point out dogs and cats as you walk along the road and try and find pictures and perhaps cut them out. Look for models of animals and if your child is able to play with miniature toys use them in his doll play.

**Doll Play**
This type of play is vitally important for children to experience, and offers many opportunities to extend the child's understanding and use of language. Playing with toys such as these means that your child can enact everyday situations in a play sequence. The language you and your child are using is then related to everyday activities and is therefore functional for him. You do not even need special toys, ordinary household objects (unbreakable!) can be used equally as well. You can also use your child's own brush and flannel and perhaps a box for a bed and an old nappy for the doll's blanket.

Listed below are some ideas:

**Tea Party**
Equipment - dolls and teddies, crockery and cutlery.

Talk about the objects being used and encourage the child to describe what he is doing (action words). Try and follow the child's lead in the activity and avoid imposing too many of your own ideas. However, it may be that your child will initially need more guidance which can gradually be reduced. Describe what the doll and teddy are doing, sitting down, drinking, eating (action words). Describe what they are drinking and eating (names of food). For checking the child understands dolly and teddy names, you could ask him to pass a cup or a plate to the dolly or the teddy.

**Bath Time**
Suggested equipment - washing-up bowl, sponge, flannel, empty shampoo bottle, soap, toothbrush, hairbrush, doll and teddy.

Talk about the objects and encourage the child to use their names. When bathing the doll you can check the child's comprehension of body parts and also whether he is able to use the name of any of them. Check his understanding and use of verbs like wash, brush, splash, swim. Ask him to make the teddy do these. You could also include the use of some social words and perhaps 'more' and 'again' - 'Make dolly splash again', 'Dolly needs more soap' etc.

**Dressing**
Suggested equipment - doll and teddy with some clothes.

Here you can use names of clothes and also verb particles because you can put things on and off the dolly and teddy. This kind of dressing play leads on well from the washing play at bath time. You could talk about dolly and teddy getting up out of bed, having a wash and getting dressed like the child would do himself.

**Bedtime**
Suggested equipment - toy bed (boxes), doll and teddy, something for a blanket, something for a pillow, perhaps a book.

The language you could include in this could be the names of the items listed above and you could use verbs such as sleep, lie down, read, wake up. Talk about putting the dolly and teddy into bed, getting undressed, putting night clothes on etc. Perhaps get the child to show the doll or teddy a picture book and perhaps encourage him to name the pictures for the dolly.

Language learning does not just happen at the specific times you set aside for teaching games although these are good opportunities for working on particular goals. Language learning happens throughout the day in every situation. It's important to use simple language and familiar phrases and sign as well if you are teaching your child signs. It is also important not to put too much pressure on the child to say things because that can have the opposite effect! The following are some ideas on how you can utilise situations to encourage your child's language development.

(a) *Washing* you could play with a doll at bathtimes and as you wash the child's face he could do the same to the doll. Ask the child to wash his own face and hands etc. and encourage him to tell you what you are washing or perhaps what you are going to wash next.

(b) *Dressing* Lay his clothes out in the morning and ask him to find his socks, his shirt, his trousers, etc. to put on, and once he has selected an item correctly, tell him to put his trousers on, socks on etc. Encourage him to name the items of clothing. Perhaps when you have asked him to select one, try asking him to tell you what he is going to put on next.

(c) *Mealtimes* Lay the table, talk about the knives, forks, spoons, plates and ask him to put them on the tables, perhaps saying whose spoon it is, eg "That's mummy's spoon - put it in mummy's place'. Encourage him to name the cutlery and tell you where to put it, whose it's going to be. Talk about the food that you eat and encourage him to make a choice between items if possible. Use simple language; 'eat peas up', 'dinner all gone'.

(d) *Housework and washing-up etc* Talk about what you are doing and how you're doing it and encourage the child to describe what you're doing and ask him what you're going to do next.

(e) When out for a walk point out things of interest and get him to talk about them, eg if you see a bus, a big bus, a red bus, a cat; if you meet people talk about them.

(f) *Bedtime* Getting undressed, which clothes is he going to take off, talk about them as he takes them off and whether they are going to be washed or worn again. Talk through his bedtime routine. Bedtime is also a very good time for having a story!

**LOOKING AT BOOKS**

Children's interest in books varies, some are very eager to look at them and others are not. If your child is interested in books, it can be a very good language learning situation. Your child will probably have preferences, but it is an idea to choose books that are not too long and have clear simple pictures. I always feel it's a good idea to finish the book even if it means missing out the middle pages and only looking at the first few and the last ones. Try asking your child to point to certain objects or to people doing activities. As well as this you could try asking him to point to 'the one for drinking, for eating', etc. It is also important to give your child an opportunity to initiate speech as well as doing things as directed by you. So as well as asking him to name pictures and tell you what people are doing, give him space to comment without your direct questioning. Expand any verbalisations. Books are also a way of seeing that they are generalising the language they are learning in other situations and adapting them to this new situation.

**Two words together**

In this section we shall look briefly at encouraging the use of two words together. It is difficult to state an exact moment at which two words or sounds should be expected. Sometimes figures are given, eg when a child has 100 words now is the time to start joining them together. In practice it should be more flexible than this, he needs to be able to use a wide range of different types of words before joining them together and as with developing single words, models of the utterances required need to be given. Also the child's understanding must be increasing to the point at which he can respond to simple instructions, eg 'find daddy's coat' (where he has a choice of other people's coats or boots) rather than just 'find the coat'.

It is important for him to have a model of the type of utterance to use without necessarily asking him to imitate it. A way to do this is by expansion. If the child points at some shoes and says 'shoes', you could say 'that's right, daddy's shoes' or 'big shoes'.

Children's early two word utterances often consist of one constant word which they join with many different words, eg, more, please, by, again, where, in, etc (more biscuits, more juice, more car, more jump. Big train, big shoe, big coat, big banana. Biscuit please, drink please, train please, cup please. Bye daddy, bye mummy etc). They may wish to indicate possession eg daddy car, mummy bag, dolly foot, or combine the name of a person with an action eg Billy jump, mummy go, baby wash. There may be combinations of an action with an item name eg 'kiss doll', 'eat please' and so on. There are other options of two word utterances that the child can use when he is learning to combine two words, these are discussed more fully in Bill Gillham's 'Two Words Together'. (83) Many of the activities as described in the single word section can be adapted to two words together, eg [illegible]sting pictures or objects into a box. You would ask

the child first to put the cup, shoe, brick in the box then perhaps pick up an object, give it to the child who names it, and then puts it in the box and as he is putting it in the box encourage him to say 'box' as well so the child begins to say, for example, 'cup box', 'shoe box' or 'in box' or 'cup in'. You would give the child a lot of help to start with, gradually reducing the help so he can say the utterance by himself, or play a disappearing objects game. Take an object which is in front of the child away and model 'cup gone'.

*Action Words* (aiming for name of person and the action
You could play "Simon Says'. You say "Simon says Billy jump' or 'daddy hop' or 'mummy sit'. The child is gently encouraged to join in and direct the action using two words. Two word utterances can also be encouraged in doll play. Instead of just asking the child which body part you're going to wash, you could encourage him to use the action word 'wash' as well. So he is telling you to 'wash feet' or 'wash face' etc. Likewise with the dressing activity you could encourage your child to use utterances such as 'coat on', 'shoes off', 'dolly's skirt', 'dolly's socks' etc when describing what he wants you to do or what you're doing to the dolly. In the tea party situation you could also encourage the use of two words, eg when giving out crockery and cutlery encourage the child to say 'plate to teddy', 'cup dolly', 'dolly drink', 'teddy eat' and so on.

As said in the previous section on single word activities, there are lots of opportunities throughout the day for encouraging language development and the sorts of situations discussed in that section can be adapted so you use two word utterances, eg at bedtime you could, as you're talking about the clothes he takes off, say 'shoes off', 'pants off' and encourage him to use these utterances.

In this section, activities have been suggested which can give you an opportunity to concentrate on and work on developing your child's language, both his understanding and his ability to express himself.

I hope these suggestions will bring to mind other activities which will be enjoyable for both you and your child.

## FIRST WORDS

Here are some examples of words that your child might learn first.

Of course the types of words a child will learn first are dependent on their own environment

**Nouns**

| Objects | Clothes | Transport | Food | Body Parts | Environment |
|---|---|---|---|---|---|
| cup | shoes | bike | biscuit | ears | house |
| brush | pants | car | apples | eyes | gate |
| ball | coat | tractor | sweets | nose | tree |
| book | pyjamas | bus | banana | mouth | grass |
| key | nightie | train | drink | hair | door |

| Objects | Clothes | Transport | Food | Body Parts | Environment |
|---|---|---|---|---|---|
| plate | dress | boat | egg | feet | garden |
| spoon | trousers | | juice | hands | |
| brick | jumper | | dinner | tummy | |
| doll | hat | | milk | bottom | |
| teddy | vest | | tea | teeth | |
| watch | socks | | | | |
| box | bag | | | | |

| Animals | People | | Home |
|---|---|---|---|
| chicken | mum | | bed |
| fish | dad | | chair |
| dog | names of | family | table |
| cat | family pets etc | | |

**Actions**

| | | | |
|---|---|---|---|
| cut | cry | brush | stop |
| wash | come | clap | gone |
| read | lift | run | falldown |
| walk | go | sit | sleep |
| want | kick | throw | get |
| put | drink | | |

**Attributes**

| | | | | |
|---|---|---|---|---|
| hot | cold | dirty | naughty | nice |

**Social**

| | | | |
|---|---|---|---|
| there | What's that | please | thank you/ta |
| Hello | Goodbye | on | off |
| up | down | gone | more |
| again | | | |

**Two-word phrases** - examples of the type of phrases to encourage

| | |
|---|---|
| drink gone | baby's shoe |
| Daddy gone | mummy's book |
| car gone | grandad's car |
| | |
| bye-bye granny | where shoe? |
| bye-bye daddy | where book? |
| bye-bye car | where mummy? |
| | |
| more dinner | hello bus |
| more ball | hello daddy |
| more drink | hello teddy |

| | |
|---|---|
| hat on | daddy go |
| light on | mummy come |
| coat on | baby sleep |
| | |
| eat tea | no dinner |
| wash face | no bed |
| clean teeth | no coat |
| | |
| drink please | drink cold |
| more please | fire hot |
| carry please | red bus |
| | blue coat |

**Some useful books and materials to use with your child.**

Start as early as possible with:

BABY BOARD BOOKS - Helen Oxenbury - These are entitled Family, Dressing, Working, Playing and Friends.

The other outstanding book that covers everything is:

"The First Thousand Words" by Heather Amery and Stephen Cartwright (Usborne)

This teaches all about me, clothes, families, doing things, opposite words, seasons, weather, games and sports, shapes, counting, numbers, plus looking together at: school, home, seaside, farm etc.

They also make placemats and the child can find something different on them all the time while waiting for his meal - a super talking point.

*Match a Balloon* - by Ravensburger - to teach the child colours.

This is a must and *all* the family joins in even if they do not want to.

*Magnetic Fishing* - by Spears - a super co-ordination game and again colours.

*Ladybird Counting Game* - Orchard Toys - to teach counting.

*Magnetic Numbers* - Step by Step - put them on the freezer or fridge up to three to start with and increase when those have been mastered. Can also be made into a fishing game - fix magnets to lines and away you go!

*Magnetic Alphabet* - Fisher Price - once again make it fun and fish the letters out, later build words.

*Shapes* - make your own from nice bright card starting with round, square, and triangle. Once again - attach paperclips and "fish them" out - great excitement!!!

*Clocks* - Early Learning Centres produce a nice plain one to start with. Later - *Tell the Time Purple Clock* the numbers pop out and the child puts them back in the right order.

*Games* - First dominoes - teach the child to be observant, knowing what card to put down next and teaching him to look at the *top* and *bottom*.

*GALT* - Giant Picture Lotto Find It

*Learning Development Aids* (Special needs catalogue from: Duke Street Wisbech, Cambs, PE13 2AE) Tel: (0945) 63441

Sound Lotto

Pictures please

Whats' wrong cards

*DLM* - Taskmaster Ltd., Morris Road, Leicester, LE2 6BR

All purpose photo library. Consumer sequential cards.

*Abbatt* - Play Specials catalogue.

E J Arnold & Son Ltd, Parkside Lane, Dewsbury Road, Leeds LS11 5TD Tel (0532) 772112

*Useful References* - for further reading

*On language development*

Crystal, D (1986) *Listen to Your Child,* Penguin.

McConkey, R and Price, P (1986) *Let's Talk,* Souvenir Press.

Gillham, B (1979) *First Words Programme,* George Allen & Unwin, paperback.
Gillham, B (1983) *Two Words Together,* George Allen & Unwin, paperback.

Hastings, P and Hayes, B (1981) *Encouraging Language Development,* Croom Helm. paperback.

Jeffree, D and McConkey, R (1976) *Let Me Speak,* Souvenir Press, paperback.

Cooke, J and Williams, D (1985) *Working with Children's Language,* Winslow Press.

**On early development in general**

Millard, D M (1974 *Daily Living with a Handicapped Child,* Croom Helm, paperback.

Riddick, B (1982) *Toys and Play for the Handicapped*, Croom Helm, paperback.

Jeffree, D, McConkey, R and Henson, S (1977) *Let Me Play*, Sounvenir Press.

**On reading**

Butler, D (1979) *Cushla and her books*, Hodder and Stoughton.

Butler, D (1982) *Babies need books*, Penguin

Baker, C (1980) *Reading Through Play*, Macdonald, paperback

Butler D and Clay, M (1979) *Reading begins at Home*, Heinemann, paperbck.

Tatcher, J (1985) *Teaching Reading to Mentally Handicapped Children*.

**On Down's Syndrome**

Cunningham, C (1982) *Down's Syndrome - A Guide for Parents*, Souvenir Press. (This book is a really helpful guide to the condition for parents of a new baby)

Lloyd, J M (1986) *Jacob's Ladder: A parents' view of Portage*. Costello.

More detailed information:

Lane D and Stratford B (1985) *Current Approaches to Down's Syndrome*, Holt, Rinehart and Winston.

And for the researcher; a thorough review of the literature to 1978 may be found in:

Gibson, D (1978)) *Down's Syndrome*, Cambridge University Press.

**References to Relevant Research**


I. Andrews, R J and Andrews J G (1977) *A study of the spontaneous oral language of Down's Syndrome children.* Exceptional Child, 24(2), 86-94.

2. Anwar, F (1981) *Motor function in Down's Syndrome.* International Review of Research in Mental Retardation, 10, 107-138

3. Bates, E, Bretherton, I, Beeghly-Smith, M and McNew, S (1982) *Social bases of language development: A reassessment.* In Lipsitt, L P and Spiker, C C (eds) Advances in Child Development and Behaviour, 16, 7-75, New York, Academic Press.

4. Berger, J and Cunningham, C C (1986) *Aspects of early social smiling by infants with Down's Syndrome.* Child: Care, Health and Development. 12, 13-24.

5. Berger, J and Cunningham, C C (1983) *Development of Early Vocal Behaviours and Interactions in Down's Syndrome and non-handicapped.* Infant-Mother pairs.

6. Berger, J and Cunningham, C C (1981) *The development of eye-contact between mothers and normal v Down's Syndrome infants.* Developmental Psychology, V 17(5), 678-689.

7. Berry, P, Mathams, P and Middleton, B (1977) *Patterns of interaction between a mother and her Down's Syndrome Child: Single case ethological study.* The Exceptional Child, vol 24, 3, Nov 1977.

8. Bleile, K and Schwarz, I (1984) *Three Perspectives on the speech of children with Down's Syndrome,* Journal of Communication Disorder, 17, 87-94.

9. Bloom, L, Lifter, K and Broughton, J (1981) *What children say and what they know: Exploring the relations between product and process in the development of early words and early concepts.* In Stark, R E (ed), Language Behaviour in Infancy and Early Childhood, pp 301-322, New York, Amsterdam, Oxford; Elsevier/North Holland.

10. Bowerman, M (1976) *Semantic factors in the acquisition of rules for word use and sentence construction.* In Morehead, D M and Morehead, A E (eds), Normal and Deficient Child Language, Baltimore, University Park Press.

11. Bricker, D D and Carlson, L (1981) *Issues in early language intervention.* In Schiefelbusch, R L and Bricker, D D (eds), Early Language: Acquisition and Intervention, pp 477-516, Baltimore, University Park Press

12. Bridges, A and Smith, J (1984) *Syntactic comprehension in Down's Syndrome children.* British Journal of Psychology, 75, 187-196.

13. Brinker, R P and Bricker, D (1980) *Teaching a first language: Building*

*complex structures from simpler components.* In Hogg, J and Mittler, P (eds), Advances in Mental Handicap Research, Vol.I, pp 197-223 New York, John Wiley.

14. Bryant, P and Bradley, L (1985) *Children's reading problems.* Blackwell, Oxford

15. Buckhalt, J A, Rutherford, R B and Goldberg, K E (1978) *Verbal and non-verbal interaction of mothers with their Down's Syndrome and non- retarded infants.* American Journal of Mental Deficiency, 82, 4, 337-343.

16. Buckley, S J (1981) *Parents as partners. Are we asking too much?* Early Childhood 2 (1) 15-16.

17. Buckley, S J (1982) *The Connors Toy Libraries; the evolution of a service for parents and children.* Early Childhood 2 (5) 3-8.

18. Buckley, S J (1984) *The influence of Family Variables on Children's progress on Portage.* in Dessant, A 'What is important about Portage.' NFER - Nelson.

19. Buckley, S J (1985) *Attaining of basic educational skills.* Chapter in Stratford R and Lane D (eds) *Current approaches to Down's Syndrome.* Holt/Saunders 1985.

20. Buckley, S J (1985) *The effect of Portage on the development of Down's Syndrome children and their families* an interim report in (Daly B et al), *The Importance of Parents* NFER - Nelson,

21. Buckley, S J (1985) *Teaching Parents to teach reading to teach language.* in Wolfendale, S and Topping, K *Parental Involvement in Children's Reading.* Croom Helm.

22. Buckley, S J (1983) *Reading and Language Development in children with Down's Syndrome.* Portsmouth Down's Syndrome Project. Psychology Department, Portsmouth Polytechnic. Booklet and Video.

23. Buckley, S and Sacks, B (1986) *The adolescent with Down's Syndrome: Life for the teenager and for the family.* In Press.

24. Buium, N, Rynders, J and Turnure, J (1974) *Early maternal linguistic environment of normal and Down's Syndrome language learning children.* American Journal of Mental Deficiency, 79(1),52-58.

25. Burr, D B and Rohr, A (1978) *Patterns of psycholinguistic development in the severely mentally retarded: A hypothesis.* Social Biology, 25(1), 15-22.

26. Cardoso-Martins, C, Mervis, C B and Mervis, C A (1983) *Early Vocabulary Acquisition by children with Down's Syndrome.* American Journal of Mental Deficiency, 90(2),177-184.

27. Cardoso-Martins, C and Mervis, C B (1985) *Maternal speech to prelinguistic children with Down's Syndrome.* American Journal of Mental Deficiency, 89(5),451-458.

28. Chapman, R S (1981) *Cognitive development and language comprehension in 10 to 21 month-olds.* In Stark, R E (ed), Language Behaviour in Infancy and Early Childhood, pp 359-91, New York, Amsterdam, Oxford, Elsevier/North Holland.

29. Cheseldine, S and McConkey, R (1979) *Parental speech to young Down's Syndrome children: an intervention study.* American Journal of Mental Deficiency, 83(6), 612-620.

29. Chipman, H H (1981) *Understanding language retardation: A developmental perspective.* In Mittler, P (ed), Frontiers of Knowledge in Mental Retardation, Vol I, pp 181-9, Baltimore, University Park Press.

30. Coggins, T (1972) *Relational meaning encoded in the two-word utterances of Stage I Down's Syndrome children.* Journal of Speech and Hearing Research, 22(1),166-178.

31. Coggins, T E and Morrison, J A (1981) *Spontaneous imitations of Down's Syndrome children: A lexical analysis.* Journal of Speech and Hearing Research, 24(2),303-308.

32. Coggins, T, Carpenter, R L and Owings, N O (1983) *Examining early intentional communication in Down's Syndrome and Non-retarded children.* British Journal of Disorders of Communication 18(2), 98-106.

33. Coggins, T E and Stoel-Gammon, C (1982) *Clarification strategies used by 4 Down's Syndrome children for maintaining normal conversational interaction.* Education & Training of Mentally Retarded. 17(1), 65-67.

34. Cornwell, A (1974) *Development of language, abstraction and numerical concept formation in Down's Syndrome children.* American Journal of Mental Deficiency, 2, 179-190.

35. Cromer, R F (1981) *Reconceptualising language acquisition and cognitive development.* In Schiefelbusch, R L and Bricker, D D (eds), Early Language: Acquisition and Intervention, pp 51-137, Baltimore, University Park Press.

36. Cunningham, C C and Sloper, P (1984) *The relationship between maternal ratings of first word vocabulary and Reynell language scores.* British Journal of Educational Psychology, 54, 160-167.

37. Cunningham, C C, Glenn, S M, Wilkinson, P and Sloper, P (1985) *Mental ability, symbolic play and receptive expressive language of young children with Down's Syndrome.* Journal Child Psychology and Psychiatry, 26(2), 255-265.

38. Cunningham, C and McArthur, K (1981) *Hearing loss and treatment in young Down's Syndrome children.* Child: Health, Care and Development, 7, 357.

39. Davies, B (1985) *Hearing Problems* in Lane D and Stratford B *Current Approaches to Down's Syndrome,* Holt, Rinehart, Winston.

40. Dewart, M H (1979) *Language comprehension processes of mentally retarded children.* American Journal of Mental Deficiency, Vol 84(2), 177-183.

41. Dodd, B, (1976) *A comparison of the phonological systems of M A matched normal, SSN and Down's Syndrome children.* British Journal of Disorders of Communication, 11(1), 27-42.

42. Dodd, B J (1972) *Comparison of babbling patterns in normal and Down's Syndrome infants.* Journal of Mental Deficiency Research, 16, 35-40.

43. Dodd, B (1975) *Recognition and reproduction of words by Down's Syndrome and non-Down's Syndrome retarded children* American Journal of Mental Deficiency, 80(3), 306-311.

44. Duffen, L (1974) *Teaching Reading to Teach Talking.* Cheam: Down's Babies Association, South East Branch.

45. Duffen, L (1976) *Teaching reading to children with little or no language.* Remedial Education, 11, 139.

46. Duffen, L (1979) *For reading read listening,* Learning, 1, 61-3.

47. Evans, D and Hampson, M (1969) *The language of mongols.* British Journal of Disorders of Communication, 3, 71-181.

48. Evans, D (1977) *The development of language abilities in mongols: a correlational study.* Journal of Mental Deficiency Research, 21, 103.

49. Fowler, A E (1984) *Language acquisition of Down's Children: Production and Comprehension.* PhD Thesis, Dissertation Abstracts, 46, 01.

50. Frith, U and Frith C D (1974) *Specific motor disabilities in Down's Syndrome.* Journal of Child Psychology and Psychiatry, 15, 293-301.

51. Gath, A and Gumley, D (1984) *Down's Syndrome and the Family: Follow-up of children first seen in infancy.* Developmental Medicine and Child Neurology, 26, 500-508.

52. Gibson, D (1978) *Down's Syndrome.* The Psychology of Mongolism, Cambridge, Cambridge University Press.

53. Green, T R and Laxon, V J (1978) *Entering the World of Number.* London Thames & Hudson.

54. Greenwald, C A and Leonard, L B (1979) *Communicative and sensorimotor development of Down's Syndrome children.* American Journal of Mental Deficiency, 84, 296-303.

55. Gunn, P (1985) *Speech and Language* in Lane, D and Stratford B *Current Approaches to Down's Syndrome,* Holt, Rinehart, Winston.

56. Gunn, P, Berry P and Andrews, R J (1982) *Looking behaviour of Down's Syndrome infants.* American Journal of Mental Deficiency, 87(3), 344-347.

58. Guthmann, A J and Rondal, J A (1979) *Verbal operants in mother's speech to non-retarded and Down's Syndome children matched for linguistic level.* American Journal of Mental Deficiency, 83(5) 446-452.

59. Halle, J W (1985 *Enhancing social competence through language: an experimental analysis of a practical procedure for teachers.* Topics in early childhood special education 4(4), 77-92.

60. Hallidie-Smith, K (1985) *The heart* in Lane, D and Stratford, B *Current Approaches to Down's Syndrome,* Holt, Rinehart, Winston.

61. Hartley, X Y (1981) *Lateralisation of speech stimuli in young Down's Syndrome children.* Cortex, 17, 2.

62. Hornby, G and Jensen-Procter, G (1984) *Parental speech to language delayed children: a home intervention study.* British Journal of Disorders of Communication, 19, 97-103.

63. Jago, J, Jago, A and Hart, M (1984) *An evaluation of the total communication approach for teaching language skills to developmentally delayed pre-school children.* Education and Training of the Mentally Retarded, 19(3), 175-182. 94

64. Jeffree, D and McConkey, R (1975) *Extending language through play.* Special Education: Forward Trends. 1(3), 13-16.

65. Jeffree, D, Wheldall, K and Mittler, P (1973) *Facilitating two-word utterances in two Down's Syndrome boys.*

66. Jones, O H (1977) *Mother-child communication with pre-linguistic Down's Syndrome and normal infants* in Schaffer H R (Ed) Studies in mother- infant interaction. N Y Academic.

67. Krakow, J and Kopp, C (1982) *Sustained attention in young Down's syndrome children.* Top, Early Childhood, Special Education, 2, 32-42.

68. Layton T and Sharifi, H (1978) *Meaning and Structure of Down's Syndrome and non-retarded children's spontaneous speech.* American Journal of Mental Deficiency, 83, (5), 439-443.

69. Leifer, J S and Lewis, M (1983) *Maternal Speech to normal and handicapped children: a look at question-asking behaviour.* Infant Behaviour and Development, 6, 175-187.

70. Leifer, J S and Lewis, M (1984) *Acquisition of conversational responses skills by young Down's Syndrome and non-retarded children.* American Journal of Mental Deficiency, 88(6), 610-618.

71. Le Provost, P A (1983) *Using the Makaton vocabulary in early language training,* Mental Handicap, 11(1), 29-30.

72. Lombardino, L J, Klein, M P, and Saine, T J (1982) *Maternal Interrogatives during Discourse with Language Learning normal and Down's Syndrome children: A preliminary clinical taxonomy.* Education and Training of the Mentally Retarded. 17(3), 222-226.

73. McConkey, R, Jeffree, D M and Hewson, S (1979) *Involving parents in extending the language development of their young mentally handi-capped children.* British Journal of Disorders of Communication, 14(3), 203-216.

74. McConkey, R and Martin, H (1983) *Mother's play with toys: a longitudinal study with Down's Syndrome infants.* Child: Care, Health and Development, 9, 215-226.

75. McDade, H L and Adler, S (1980) *Down Syndrome and short-term memory impairment: a storage or retrieval deficit?* American Journal of Mental Deficiency, 84, 561-7.

76. MacDonald J D, Blott, J P, Gordan, Spiegel, B and Hartmann, H (1974) *An experimental parent-assisted treatment program for pre-school language-delayed children.* Journal of Speech and Hearing Disorders, 39(4), 395-415.

77. Mahoney, G, Glover, A and Finger, I (1981) *Relationship between language and sensorimotor development of Down's Syndrome and Non-retarded children.* American Journal of Mental Deficiency, 86(1), 21-27.

78. Mahoney, G and Snow, K (1983) *The relationship of sensorimotor functioning to children's response to early language training.* Mental Retardation 21(6), 248-254.

79. Mahoney, G (1983) *A developmental analysis of communication between mothers and infants with Down's Syndrome.* Topics in early childhood Special Education, 3(1), 63-76.

80. Marcel, M M and Armstrong, V (1982) *Auditory and visual sequential memory of Down syndrome and non-retarded children.* American Journal of Mental Deficiency, 87(1), 86-95.

81. Martin, H, McConkey, R and Martin, S (1984) *From acquisition theories to intervention strategies: an experiment with mentally handicapped children.*

British Journal of Disorders of Communication, 19, 3-14.

82. Matey, C and Kretschmer, R (1985) *A comparison of mother-speech to Down's Syndrome, hearing impaired and normal hearing children.* The Volta review. 205-213.

83. Millis, E (1985) *Ocular findings in children* in Lane, D and Stratford, B *Current Appproaches to Down's Syndrome,* Holt, Rinehart, Winston.

84. Mitchell, D R (198 (*Down's Syndrome Children in structured Dyadic Communication situations with their parents.* Hogg, J and Mittler, P, Advances in Mental Handicap Research, Wiley.

85. Mitler, P and Berry, P (1977) *Demanding language.* In Mittler, P (ed) Research to Practice in Mental Retardation, Vol 2, pp 245-51, Baltimore, University Park Press.

86. Nelson, K (1973) *Structure and strategy in learning to talk.* Mono. Soc Res Child Development. 38(1-2), 1-135.

87. Newport, E L, Gleitman, H and Gleitman L R (1977) *Mother, I'd rather do it myself: Some effects and non-effects of maternal speech style* In Ferguson, C and Snow, C (eds), Talking to Children, pp 109-149, London and New York, Cambridge University Press.

88. O'Kelly-Collard, M (1979) *Maternal linguistic environment of Down's Syndrome children.* Australian Journal of Mental Retardation. 5(4), 121-6.

89. Owens, R E and MacDonald, J D (1982) *Communicative uses of the early speech of non-delayed and Down's Syndrome children.* American Journal of Mental Deficiency, 86(5), 503-510.

90. Peskett, R and Wootton, A J, (1985) *Turn-taking and overlap in the speech of young Down's Syndrome children.* Journal of Mental Deficiency Research, 29, 263-273.

91. Petersen, G A and Sherrod, K B (1982) *Relationship of Maternal Language Development and Language Delay of Children.* American Journal of Mental Deficiency, 86(4), 391-398.

92. Reichle, J, Siegal, G and Rettie, M (1985) *Matching prosodic and sound features: Performance of Down's Syndrome pre-schoolers.* Journal of Communication Disorders, 18, 149-159.

93. Rohr, A and Burr D B (1978) *Etiological differences in patterns of psycholinguistic development of children IQ 30 to 60.* American Journal of Mental Deficiency, 82, 549-53.

94. Romski, M A and Ruder, K F (1984) *Effects of speech and speech + sign instruction on oral language learning and generalisation of action + object*

*combinations by Down's Syndrome children.* Journal of Speech and Hearing Disorders, 49, 293-302.

95. Rondal, J (1978) *Patterns of correlations for various language measures in mother-child interactions for normal and Down's Syndrome Children.* Language and Speech, 21(3), 242.

96. Rondal, J A (1980) *Verbal imitation by Down's Syndrome and non-retarded children.* American Journal of Mental Deficiency, 85(3), 318--321.

97. Rondal, J (1980) *Language delay and language difference.* Special Education in Canada, 54(2), 27-32.

97a Ross, F F (1983), *A comparison of the effects of sign-language, speech and total communication on short-term memory in Down's Syndrome Adolescents.* Dissertation Abstracts, Intem. 43.

98. Ryan, J (1975) *Mental subnormality and language development.* In Lennenberg, E H and Lennenberg, E (eds), Foundations of Language Development, pp 269-78, New York, Academic Press.

99. Rynders, J, Behlen, K L and Horrobin, J M (1979) *Performance characteristics of pre-school Down's Syndrome children receiving augmented or repetitive verbal instruction.* American Journal of Mental Deficiency, 84(I), 67-73.

100. Salzberg, C L and Villani, T V (1983) *Speech training by parents of Down's Syndrome toddlers: Generalisation across settings and instructional contexts.* American Journal of Mental Deficiency, 87(4), 403-413.

101. Schaeffer, B (1980) *Spontaneous language through signed speech.* In Schiefelbusch, R L (ed) Non-speech Language and Communication: Analysis and Intervention, pp 421-46, Baltimore, University Park Press.

102. Schaffer, H R (1977) *Early interactive development.* In Schaffer, H R (ed). Studies in Mother-Infant Interaction, pp 3-16, London, Academic Press.

103. Scheffelin, M (1968) *A comparison of four stimulus-response channels in paired-associate learning.* American Journal of Mental Deficiency, 73, 303-307.

104. Scherer, N J and Owings, N O (1984) *Learning to be contingent: retarded children's responses to their mothers' requests.* Language and Speech, Vol 27, 3, 255.

105. Semmel, M I and Dolley (1971) *Comprehension and imitation of sentences by Down's Syndrome children as a function of transformational complexity* American Journal of Mental Deficiency, 75(6), 739-745.

106. Snow, C E (1977) *The development of conversations between mother and babies.* Journal of Child Language, 4, 1-22.

107. Sommers, R K and Starkey, K L (1977) *Dichotic verbal processing in Down's Syndrome children having qualitatively different speech and language skills.* American Journal of Mental Deficiency, 82, 44-53. 97

108. Spiker, D and Crawley, S B (1983) *Mother-child interactions involving 2 year olds with Down's Syndrome: A look at individual differences.* Child Development, 54, 1312-1323.

109. Stoneman, Z, Brody, G H and Abbott, D (1983) *In-home observations of young Down's Syndrome children with their fathers and mothers.* American Journal of Mental Deficiency Research, 87(6), 591-600.

110. Tamari, P L (1979) *Language Acquisition of Down's Syndrome children: the development of form and meaning.* Diss. Abstract, Vol 40B.

111. Taylor, J, Berry, P and Conn, P (1976) *A study of language learning through imitation.* in Berry, P (Ed) *Language and communication in the mentally handicapped.* Arnold, London.

112. Trevarthen, C (1977) *Descriptive analyses of infant communicative behaviour.* In Schaffer, H R (ed), Studies in Mother-Infant Interaction, pp 227-70, New York, Academic Press.

113. Weigel-Crump, C A (1981) *The development of grammar in Down's Syndrome children.* Education and Training of Mental Retardation, 16, 24-30.

114. Weistuch, L and Lewis, M (1985) *The language interaction intervention project.* Analysis and Intervention in Developmental Disabilities, 5, 97-106.

115. Weller, E L and Mahoney, G J (1983) *A comparison of oral and total communication modalities on the language training of young mentally handicapped children,* Education and Training of the Mentally Retarded. 18(2), 103-110.

ABOUT THE BOOK: - This book is written for parents and those who work with children with Down's Syndrome. The authors, a team of experienced speech therapists and a psychologist, describe the steps of early language development and the specific problems facing the child with Down's Syndrome.

They emphasise the importance of planning all language teaching activities to develop the child's understanding and use of spoken language in a systematic way and include chapters on the teaching of signing and reading.

A COLOUR VIDEOTAPE showing children from 6 months to eight years of age, brings alive the stages of development described in the book. It illustrates the particular problems that children with Down's Syndrome have to overcome and the use of signing and reading to develop language skills.

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